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## CONSTRUCTIVE MEDICINE AND INDUSTRY

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Of late so much has been said of the doctor in the lay press, both here and abroad, that not only is the public confused in regard to existing medical problems but many doctors themselves are confused, as well as perturbed, both in regard to their personal professional well being and in regard to the actual future of medicine. Unfortunately the majority of investigators who have written on the subject of medicine for lay consumption are nonmedical in profession and as such are not capable of studying the problem from its fundamental basis, namely the caliber of medical care that is available. Underlying the present confusions is the fact of worldwide social and political change. It is inevitable in times like these that all human institutions should be called into question, and there is no denying that the status of the physician has been adversely affected and that the point of view and attitude of patients are undergoing alteration. It does little good merely to deplore this situation. Rather it places the responsibility squarely on the shoulders of the individual doctor.

The quality of future medical care will be in direct proportion to the intelligence and vigor with which medical men endeavor to maintain their present degree of independence and high standards. The medical problems of industry have long assumed major proportions. Many industrial concerns are aware of their medical problem and are now assuming this responsibility. In order to accomplish this, management looks to the medical profession for advice and guidance. The doctor in industry is no longer a first aid attendant, an individual who puts on bandages and responds to the beck and call of the personnel man to take the side of management versus the employee. The doctor's job in industry has been greatly broadened. Today progressive management expects us to be cognizant of all hazardous occupations within the plant, to recognize a case of Ayerza's disease when we find one, to know and evaluate the pressing physical and mental problems of each employee.

The busy industrialist who is guided by competent medical advice is on solid ground as far as public opinion of his attitude toward his employees is concerned. The employee in turn profits by such managerial interest in his behalf. He feels better, has more zest and, if mentally efficient, performs his duties in a manner which is beneficial to him and to his family as well as to the employer. Such assignments are a challenge to the qualified physician; he is in a position to do so much for so many.

In discussing health programs, however, it is important to keep our definitions clear. The last decade, for example, has been marked by an increasing tempo in health legislation. The focus of attention has almost invariably been on the administrative machinery involved.[1] Most of these proposals have inappropriately been called "health programs," whereas they actually constitute tax supported subsidies for the treatment of the sick and the redistribution of the economic burden, thereby adding immensely to the administrative costs. Whatever its merits may be, sickness insurance does not ensure health. It is true that recent British (Beveridge)[2] plans include more preventive ideas than do ours. Nevertheless the basic concept that maintaining health is a governmental function seems to permeate all these programs. In my opinion the true responsibility of society is to make available the means by which health may be pursued and conserved, remembering that the individual citizen must accept considerable personal responsibility.

It is not within the scope of the present discussion to debate the pros and cons of certain governmental measures which will soon affect us. Such legislation is not the answer to industry's special problems in the maintenance of employees' health. Experience in England under the panel system has proved this.

As we all know, preventive medicine through control of the environment includes sewage disposal, water supplies, milk and other foods—all carriers of bacteria. Industry for its part is credited with instituting wholesale measures directed toward control of the environment for purposes of preventing disorders other than infections. Air borne irritants such as dusts, fumes and gases have long been serious hazards. Modern ventilating devices now improve the atmosphere, thereby preventing many possible diseases. Today any incidence of lead poisoning, silicosis, asbestosis, nitrous fume poisoning and the like is evidence of neglect on the part of management, just as an epidemic of milk borne typhoid denotes negligence on the part of public health officials. Improved lighting, better construction of work places, safety devices and rules are all acknowledged preventive measures. Indeed, many books have been written on how to render innocuous the environment in which we reside and work, and much of what these books contain has become the knowledge of the sanitary engineers, the architects and the safety men. In addition to this there exists a group of constructive measures which may be applied directly to the indi-

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

1. Principles of a Nationwide Health Program, editorial, J. A. M. A. **126:** 640 (Nov. 4) 1944.
2. A National Health Service, Department of Health for Scotland, Ministry of Health, London, His Majesty's Stationery Office, 1944. MacNalty, A. S.: Preventive Medicine in Britain, Am. J. M. Sc. **208:** 1 (July) 1944.

vidual. These for the most part encompass the knowledge of a physician. When applied to their fullest worth and intent, such measures increase the individual's ability to withstand certain infections, intoxications, fatigues, nutritional abuses and somatic and psychic traumas which constitute the trials and tribulations of existence. Average modern concept, however, limits such personal or individual measures largely to immunization against certain diseases.

The term "constructive medicine" [3] can well be applied to this. The two terms preventive medicine and constructive medicine are not interchangeable. Constructive medicine is the improvement of general health and preventive medicine is the prevention of disease. Both are related, but one indicates a positive approach, the other an important but somewhat negative approach.

The future strategy of both preventive and constructive medicine falls into two divisions: (1) public health activities which have to do primarily with mass measures to minimize health hazards in the environment and (2) private health efforts concerned directly with the individual. Both approaches must be developed to their maximum capacity and utilized cooperatively. Continuation and expansion of the present public health approach to preventive medicine is inevitable and desirable. The established procedures of sanitary science must continue, and research into improving methods must likewise go ahead. Acute and rapidly spreading epidemics are still possible if the barriers of defense are neglected. Milder disorders, such as the common cold, are harder to control because those affected remain ambulatory [4] and in constant contact with other persons, thus spreading infection. Prevention of typhus in the Mediterranean area in the midst of the near chaos of war indicates what can be done with the control of insect vectors if complete cooperation of the population is obtained. DDT and the other modern insecticides may accomplish miracles of insect eradication, but their value depends on their universal application.

The subject of constructive medicine having thus been introduced, let us now consider this specialty in terms which apply to medicine in industry and our responsibility in this particular field. Unfortunately, attention in our medical schools of today is still largely focused on disease instead of on the patient. It is true and we are aware that unsolicited medical advice is almost invariably ignored. For countless centuries man did not seek aid until he was in trouble. Then and only then did he consult his priest and later his doctor. Fully effective constructive medicine requires an active, initiating role on the part of the patient. Until people are educated to seek our help before they experience pain or fear it will be impossible for them to appreciate truly what constitutes "good efficient medical service."

Health is a privilege to those who seek it. It cannot be taken for granted—it is not inherent—it must be earned. It requires considerable initiative and perseverance to maintain. Many shun this responsibility. Even though it is generally accepted by the masses that many diseases are preventable, illness is still considered an unanticipated incident. Few realize that health is a personal responsibility. Preventive medicine to date has done much in controlling many diseases common to childhood. But thus far it has accomplished very little in the prevention and retardation of the so-called degenerative diseases of the adult, such as menopausal disturbances, cancer and certain metabolic disorders. Fatigues, minor changes in the blood consequent to malnutrition (including excesses as well as deficiencies) and important psychosomatic factors, which are invariably highly individualistic, contribute greatly to the causation of these disorders. Consequently, constructive medicine which includes the prevention and control of these disorders is of paramount importance to industry.

No two instances are necessarily the result of identical series of causative factors. The essential conclusion is that both constructive therapeutic measures must be individually fitted to each clinical problem. For example, the properly treated diabetic patient is physiologically well, though he is still diabetic and will always require continuous control. The person with chronic heart disease or hypertension, if properly managed, may live much longer with disability postponed, although the actual disease is never "cured" so that it may be ignored. Control is thus a modified, limited form of constructive medicine. At present it is the one practical counterattack against the progressive diseases.

The extent and urgency of the problem of mental disease is obvious to all.[5] Psychosomatic disorders must likewise gain greater recognition. The problem of venereal disease has only recently received constructive and scientific attention. Too long have the venereal diseases been classified as moral rather than medical problems. If this concept is extended so that attention is directed from the prevention of disease to the construction of health, medicine in industry takes on new significance. The treatment of disease is essentially an attempt to reconstruct health. How often have you observed excessive concern with the disease and inadequate attention to the patient who has the disease? Health is relative; there is always room for improvement —even in those assumed to be well because of absence of symptoms and signs of obvious disease. Apparently, healthy people could be healthier. It is acknowledged that guidance in nutrition, regulations of exercise, instruction in sane cleanliness and advice regarding wiser habits of living do develop healthier children. Is it not logical that the health of adults so guided would, even if not always maintained, be profoundly improved?

Research into the etiology and methods of protection against acute infectious diseases has been greatly accelerated by the war. Familiar examples of such developments are sulfone medication to prevent common upper respiratory infections, the value of yellow fever and typhus vaccine and the therapeutic use of penicillin. There have also been many developments in the realm of aviation and tropical medicine.

Because of the urgency of these acute problems, research into the etiology of the so-called degenerative diseases characteristic of later life has been delayed. This is the field in which those of us interested in "constructive medicine," as it has been defined, will find our greatest problems and opportunities. We must focus our attention on such disorders as arteriosclerosis, hypertension, cardiovascular renal disease, diabetes mellitus, cardiac insufficiency, malnutrition and mental disturbances. The challenge is more than a purely professional one. It is directly related to the objectives of modern management. Our company, for example,

3. Stieglitz, E. J.: A Future for Preventive Medicine, New York, Commonwealth Fund, 1945.

4. Armstrong, D. B.; Watson, C. H.; Bessey, C. A.; Giberson, L. G., and Bixler, H. R.: Health Education on the Industrial Front, the 1942 Health Education Conference of the New York Academy of Medicine, New York, Columbia University Press, 1943.

5. Landis, C., and Page, J. D.: Modern Society and Mental Disease, New York, Farrar & Rinehart, Inc., 1938.

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has done much in the last few years to stabilize incomes and prepare the employee for retirement following a period of satisfactory service. It is the responsibility of our department to assist these annuitants in preparing themselves for the comfort, peace and financial security that they have justly earned.

Here is another common problem: Hardly a week goes by in our worldwide organization without some well trained young executive in whom the corporation has placed much confidence and responsibility suddenly dropping out of the picture as a result of a coronary accident. The etiology of this condition and many others equally obscure must be solved. We may be confident that management, becoming daily more aware of the effect of such happenings on organization efficiency, will, when adequately advised, assist us in carrying out scientific research on this timely problem. Discoveries will not be easy, cheap or quick. When results are obtained, all will benefit—the industrialist, the employee and the public at large.

One of the greatest needs and one of the most conspicuous opportunities that we have, as physicians in industry, is in the field of health education. It is truly amazing how few people have the slightest idea of how their body is put together, how it works and what its capacities are. Education in health must be under the direction of physicians who know their subject. Oversimplification of health education is a common consequence when the material is presented by those who do not fully understand the complexities of the problems involved. To a considerable extent we as physicians have deliberately avoided making logical and comprehensible explanations to our patients. Such attitudes are certainly archaic, and their perpetuation can only retard the progress of a constructive medical program.

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Consider, for example, the problem of absenteeism. Our records show that absenteeism due to causes not related to employment produces one to thirty-two times as much lost time as injuries directly associated with occupation. Equally expensive are the additional and unmeasured losses in production due to impaired efficiency of personnel who, though not sick enough to be absent, accomplish but a fraction of what they would be capable of doing if their health was optimum. Those with acute respiratory trouble generously spread infection among their co-workers. Included also are many with chronic, unrecognized and untreated disorders.[4] Here is a fertile subject for health education.[4]

Another important field is instruction regarding nutrition. Obesity plays a significant role in the degenerative diseases of later years. In view of the increasing incidence of cardiovascular diseases and diabetes mellitus, education in wise nutrition must stress the hazards of excesses as well as of deficiencies. Constructive medicine of the coming era will recognize the growing importance of health in the later decades of life.[6] As the child is taught to prepare for adult life, so adults need to be instructed in preparation for later maturity.[7] As physicians in industry we occupy much the same position in relation to adults that the school physician occupies in relation to children. The public as a whole should know the economic price which society pays for chronic disease and also that much of it is avoidable.

I have spoken of the need for research and education. In the final analysis, however, the control, prevention and retardation of the common and increasingly significant degenerative diseases can be accomplished only by individual attention. Each and every instance presents an individual diagnostic and therapeutic problem, for the etiology of such disorders as arteriosclerosis, hypertensive disease and diabetes mellitus consists of many factors, differing in each case. Public health measures alone will not suffice. The foundation of personal constructive medicine is the periodic health inventory. In the past these examinations have been poorly performed. They have been too hurried, too superficial and too routinized. They must be individualized, and the search for information by all possible avenues is requisite. The past and present history of the individual, laboratory data and special functional tests are equal in importance to the actual clinical physical examination. Only the qualified examiner is capable of performing such a thorough investigation.

It is inevitable that a high standard of a constructive medical program such as I have described will be expensive. It involves considerable time, equipment and an unusually high level of diagnostic acumen on the part of the physician to be effective. But its cost can be readily justified on economic grounds. For example, the value of service that can be rendered to key personnel alone is difficult to calculate, but management well knows that "wisdom and judgment are conditioned by experience, and experience depends upon time for its acquisition. The greater the specialization, the greater the difficulty in finding replacements. The greater the responsibility, the heavier the wear and tear."[3] It follows that the best medical supervision and advice should be available at all times.

In industry the physician's position on the organization chart is important. In army terms he must have a staff position, which affords him ready access to top management on each needful provocation. His salary must be commensurate with the duties that he is expected to perform. Furthermore, to be truly effective the president of an organization must consider the staff physician as his doctor; he must be personally guided by his advice. If this is common knowledge throughout the organization, the rank and file will immediately fall in line with most gratifying results.

Unfortunately, the idea of seeking medical guidance[3] is often abhorrent to the men that count the most. They frequently resent the concept that their health is any one's concern but their own. Nevertheless their health is every one's concern, not for personal reasons but because of the work they do. In this sense the job is more important than the man. A partially sick person cannot do his job as well as a man in vigorous health. Therefore the prime motivation of health maintenance should be to maintain work efficiency for the benefit of all. Let us never forget that brain power is the most precious part of manpower and is therefore deserving of the most thoroughgoing, refined and comprehensive personal medical care. In this connection let me urge again that personal constructive medicine is concerned not only with the prevention of disease but also with the active construction of greater health. Prevention alone may convert mortality into morbidity. Constructive medicine hopes to reduce morbidity as well as actually raise to a more nearly optimum level the degree of relative health.

The tools of constructive medicine are many. Knowledge of normal human physiology and the physiologic aspects of disease is a basis for improving the health of those only relatively well. Better nutrition, guidance as regards selection of occupation, the avoidance of such

6. Stieglitz, E. J.: Geriatric Medicine, Philadelphia, W. B. Saunders Company, 1943.
7. Stieglitz, E. J.: The Second Forty Years, to be published.

intoxications as prolonged and excessive fatigue, proper balance between work and play through the encouragement of wise investment of leisure,[8] selection of appropriate physical exercise and similar habits relating to health can prevent unnecessary depreciations.

In this postwar world[9] the problem of industrial health is even more significant than before. We daily witness cutbacks, frictional employment and the effects of reconversion. There are necessarily many readjustments. Millions have returned to industries from the armed forces, many handicapped.

The postwar medical problem of industry is a challenge which we cannot, must not and, I am sure, will not minimize. It is our duty and privilege to serve as efficient medical advisers to industry in these postwar problems. To this end we must cooperate with labor and management and give the individual employee the medical care he justly deserves. Through close relationship between doctor and worker, constructive medicine aims to discover an individual's weak spots before disease attacks him. A medical department efficiently schooled in the philosophy and teaching of constructive medicine is well equipped to help employees to understand what constitutes good health. This in turn will pay handsome dividends to the employer who gains greater work efficiency and personal interest and to the employee who, as a result of the understanding and maintenance of good health, should be in a position to enjoy for as long a period as possible the retirement and financial security he has justly earned.

## CONTROL OF RINGWORM OF THE SCALP AMONG SCHOOL CHILDREN

### In Hagerstown, Md., 1944-1945

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In the winter of 1943-1944 there was an unusual prevalence of ringworm of the scalp among school children in certain cities in Pennsylvania, New York and other Eastern states. A number of the state and city health officers requested that the Public Health Service send consultants from the Dermatoses Section of the Industrial Hygiene Division to recommend methods for remedying the conditions. At that time the customary method of control was either the exclusion of infected children from school or their isolation in certain schools. The treatment of the disease was usually by x-ray epilation.

The consultant from the Public Health Service did not advocate these methods of control because keeping infected children from attending school would not prevent them from spreading the infection by contact outside of school, on the streets, playgrounds and the like, and he did not advocate treatments by x-ray epilation because in most communities there were not sufficient x-ray units and technicians to give proper epilation doses to the unusually large number of children infected. He recommended, therefore, different methods of control and of treatment; namely, that infected children be permitted to attend school provided they had their hair cut closely and wore caps while on the school premises, and that treatments be given with topical medicaments.

In July 1944 an officer from the Dermatoses Section of the United States Public Health Service was assigned to Hagerstown, Md., to work with the deputy state health officer on the control and treatment of ringworm of the scalp. This officer was in charge from August 1944 to November 1945. After this date, treatments were continued under the supervision of the state health officer.

#### SOURCES OF SPREAD OF INFECTION

The plan of control of the epidemic was based on the knowledge that Microsporon audouini infection is spread by contact with infected hairs and that the principal places of contact with infected hairs are the home, the school, the playground, the movies and barber shops.

*Home.*—The records revealed that less than 10 per cent of the infected children could have been infected by another child in the same household. When 2 or more children in the same household were infected, with few exceptions they were found to have slept together or to have used the same comb.

*School and Playgrounds.*—The exclusion of children from school was not practical, nor was it advocated; therefore infected children were permitted to attend school provided they wore closely fitting caps.

*Moving Picture Theater.*—The backs of the seats in the children's favorite theater were examined with the Wood light, and they were found to be apparently free of infected hairs.

*Barber Shops.*—All the barber shops in the city were visited, and in general the sanitary conditions were found to be poor and the sterilization facilities inadequate. In many shops infected hairs were found in the combs, brushes, scissors and electric clippers. Improved methods for sterilizing combs, brushes and scissors were recommended. After numerous trials with many antiseptics which would not rust metal or destroy insulation and yet would penetrate into the crevices of clippers, it was found that immersing clippers for one minute in petroleum oil (having a boiling point of 150 to 200 C.) kept at 100 C. and working them for ten seconds while in the oil would sterilize yet not injure them. The same results could be obtained by boiling the clippers in a 2 per cent dilution of saponated solution of cresol for three minutes or by covering them with a cold 10 per cent dilution for fifteen minutes. The barbers were requested to sterilize their clippers by one of these methods.

#### EXAMINATIONS

At the opening of school a case finding survey was made by examining under the Wood light all school children in Hagerstown and adjacent rural communities. Thereafter, so far as possible, all school children were reexamined at approximately three month intervals. Preschool children in families with infected children were given a similar examination. All examinations were made with the Wood light (filtered ultraviolet rays), under which many cases of the disease showing no clinical manifestations were discovered.

8. Stieglitz, E. J.: Abnormal Arterial Tension, New York, National Medical Book Company, 1935; Arterial Hypertension, New York, Paul B. Hoeber, Inc., 1930.

9. Rowntree, L. G.: The Coming Age of Industrial Medicine, J. A. M. A. **129**: 595 (Oct. 27) 1945.

The medication not purchased on the market was prepared by Howard S. Mason, Chemist.

The complete paper of which this is a condensation is to be published at a later date in Public Health Reports.

From the Dermatoses Section, Industrial Hygiene Division, Bureau of State Services, U. S. Public Health Service.

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*Incidence of Infection.*—During the period of this study, August 1944 to November 1945, a total of 8,657 children were examined ranging from 6 weeks to 18 years of age.

The highest incidence of infection was among the grade and junior high school children in Hagerstown. The incidence among the rural children examined was relatively low. Also the incidence among the Negro children examined was lower than among the white.

Of the 8,657 children examined, 565 (479 boys and 86 girls) were found to be infected. Approximately the same number of boys as of girls were examined, yet there were six times as many boys infected as there were girls. Of the boys examined 12.1 per cent were infected, and of the girls examined 2.1 per cent were infected.

Over half of the children infected were under 11 years of age. No boys over 18 years of age nor girls over 15 years of age were found to be infected.

Approximately 65 per cent of the boys had the infection in the "clipper area" only; 31 per cent of the boys had the infection in the "clipper area" and other portions of the head. Four per cent had the infection on the crown of the head only. "Clipper area" includes those portions of the head which are in contact with clippers during barbering. This seems to indicate that the clippers were the main source of infection and that combs and brushes played a comparatively minor part. The infection among the girls was always in the area of the part of the hair.

The sizes of the infected areas which could be measured in square centimeters was less than 5 sq. cm. on 34 per cent of the infected children, 5 to 49 sq. cm. on 55 per cent and 50 or more sq. cm. on 11 per cent of the infected children. Approximately 15 per cent of the children had six or more lesions.

*Type of Fungus Found.*—Hairs from all infected children were examined both microscopically and culturally. In all but 8 children, the infections were found to be caused by Microsporon audouini.

*Reexamination of the Children.*—The effectiveness of the control program is indicated by the decrease in the number of new cases found at each successive examination. When 5,378 grade and junior high school children in Hagerstown were examined in September and October 1944 for the first time 499 cases of ringworm of the scalp were found, an incidence of 9.3 per cent. In December of the same year 13 new cases were discovered among 1,445 children, an incidence of 0.9 per cent; in March 1945, 26 new cases were discovered among 4,829 children, an incidence of 0.5 per cent, and in September 1945, 12 new cases were discovered among 5,348 children, an incidence of 0.2 per cent. Six of the 12 children found to be infected in September 1945 had not been examined previously (either preschool children or new arrivals); the other 6 had been examined one or more times during the school year 1944-1945 and had not been infected at the time of these examinations.

## TREATMENTS

To assure daily treatments for the infected children, treatment centers under the direction of trained personnel were set up in the seven schools having the largest number of cases. All treatments with the exception of those on Saturdays were given during school hours.

*Results of Treatments.*—In examination of the results of the treatments, certain factors should be taken into consideration: (1) The treatments were not compulsory and were given free of charge and (2) in approximately 50 per cent of the cases there were no clinical manifestations and the children suffered no discomfort from the infection. For these reasons and others, many children stopped treatments before they were pronounced cured.

Of the 565 children infected, 493 were treated in the United States Public Health Service clinics. Of these, 48 were cured by manual epilation with one or two treatments; 274 were cured with topical medication; 126 discontinued treatments before being pronounced cured; 45 were under treatment at the close of the study period, November 1945. By April 1946, 38 of these 45 were cured. (For the follow-up of the 126 infected children who dropped out before they were pronounced cured, see the comments by Dr. James A. McCallum, health officer of Washington County, Hagerstown, Md.)

Exclusive of the 126 children who discontinued treatments, the results obtained are summarized in table 1.

The data revealed that (1) the boys responded to the treatments more quickly than the girls, (2) the highest percentage of cures was among children from 5 to 10 years of age, (3) the percentage of cures did not vary greatly with the number of children in the household, (4) in general the higher the number of lesions the greater the average number of treatments required for a cure, (5) likewise the larger the area of infection the greater the average number of treatments required for a cure and (6) treatments given by the trained personnel were more effective than those given to the preschool children by the family.

TABLE 1.—*Summary of Results of Treatments*

| | |
|---|---|
| Number of children cured by manual epilation only | 48 |
| Number of children cured by medications during study period | 274 |
| Number of children cured by medications after study period | 38 |
| Total number of children cured | 360 |
| Number of children under treatment April 1946 | 7 |
| Total number of children | 367 |
| Per cent of children cured | 98.0 |
| Per cent of children under treatment April 1946 | 2.0 |

## MEDICAMENTS

Before treatments were begun with medicaments the hair in the infected area and extending 1 cm. beyond was clipped off as closely as possible, and it was reclipped every two weeks during active treatment. If possible, treatments were given daily except Sunday.

When the treatment centers were first opened in the fall of 1944 a number of medicaments already commonly used against ringworm of the scalp were applied. Later their use was discontinued because of unsatisfactory results, and chemicals used in industry as mildewproofing agents on fabrics, lumber and other materials were tried.

*Medication Changed.*—If, after a reasonable number of treatments with one medicament, a child showed little or no improvement, treatments were then undertaken with another preparation. During the study period, August 1944 to November 1945, seventeen different medicaments were tried.

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*Evaluation of Medicaments.*—Of 445 children treated with one or more of seventeen medicaments 195 were treated with one preparation only. Of this 195, 145 were cured and 50 dropped out before being pronounced cured. Of the 250 children treated with two or more medicaments, 129 were cured, 76 dropped out and 45 were still under treatment at the close of this study in November 1945.

In evaluation of the medicaments it was assumed that if a child had been treated and cured with one agent only, full credit should be given to this preparation; but the question arose, when the child had been treated with two or more medicaments and cured, as to which should be given credit for the cure. In view of this, two simple methods of evaluating the preparations were adopted. In both methods the average number of treatments per child was taken into consideration.

TABLE 2.—*List of Medicaments Used and Their Relative Effectiveness Based on the First Medicament*

| First Medicament | 1 Number of Treatments Given* | 2 Average Number of Treatments per Child 1 ÷ 3 | 3 Number of Children Treated† | 4 Number of Children Cured‡ | 5 Per Cent of Children Cured 4 ÷ 3 |
|---|---|---|---|---|---|
| Salicylanilide ointment | 541 | 36 | 15 | 8 | 53 |
| Lane treatment | 1,003 | 67 | 15 | 7 | 47 |
| Proprietary solution 1 | 1,637 | 82 | 20 | 9 | 45 |
| Copper oleate ointment | 1,587 | 63 | 25 | 11 | 44 |
| Copper undecylenate ointment | 454 | 38 | 12 | 5 | 42 |
| Ointment 1373 | 880 | 55 | 16 | 6 | 38 |
| Cationic detergent 1 | 4,864 | 62 | 78 | 26 | 33 |
| Proprietary ointment 2 | 2,570 | 49 | 52 | 17 | 33 |
| Cationic detergent 2 | 3,642 | 59 | 69 | 20 | 29 |
| Proprietary ointment 3 | 6,007 | 65 | 92 | 26 | 28 |
| Colloidal iodine | 853 | 37 | 23 | 6 | 26 |
| Ointment 1316 | 545 | 23 | 24 | 4 | 17 |
| P. M. S. ointment | 87 | 44 | 2 | 0 | 0 |
| Cationic detergent 1, 2 wks. alternating with proprietary ointment 3, 2 wks | 126 | 63 | 2 | 0 | 0 |
| Pentachlorphenol ointment | 0 | .. | 0 | .. | .. |
| Camphor phenol | 0 | .. | 0 | .. | .. |
| Cationic detergent 3 | 0 | .. | 0 | .. | .. |
| Total | 24,796 | 56 | 445 | 145 | 33 |

* "Number of treatments given" includes only treatments given with the first medicament used.

† "Number of children treated" includes only the children who were treated first with the specified medicament.

‡ "Number of children cured" includes only the children who were cured with the first medicament used.

The first method was based on the percentage of children cured with the first medicament used. Cures made with drugs given subsequently were disregarded.

Treatments with salicylanilide ointment, copper undecylenate ointment and pentachlorphenol ointment were begun two months before the study closed. Since only a few new infections were discovered during these two months, relatively few children received their first treatments with these medicaments. Of the 15 children treated first with salicylanilide (averaging 36 treatments per child) 8, or 53 per cent, were cured. Of the 12 children treated first with copper undecylenate (averaging 38 treatments per child) 5, or 42 per cent, were cured. Of the 445 children treated with the other 17 medicaments (averaging 56 treatments per child) only 145 children, or 33 per cent, were cured with the first agents used.

The second method was based on the percentage of children cured with the last medicament used, that is, regardless of the number of different preparations with which a child was treated full credit for the cure was given to the one being applied when he was pronounced cured. Of the 42 children treated with copper undecylenate 24, or 57 per cent, were pronounced cured during these treatments. A larger number of children (83) were treated with salicylanilide ointment, 47, or 57 per cent, of whom were cured; 48 children were treated with pentachlorphenol ointment, 19, or 40 per cent, of whom were cured. The average number of treatments per child cured for the preceding medicaments was 38, 40 and 50 respectively. For the other 14 agents used during the period of this study the proportion of children cured ranged from 0 to 38 per cent.

By the end of the study period, November 1945, the dermatologists were satisfied that salicylanilide ointment was the most efficacious preparation that had been tried. Their decisions were based on the preceding data and on their personal observations of the rapid improvement of the children under treatment when the salicylanilide was being used. It was recommended therefore that the 45 children still under treatment at that time be treated with this preparation, and if the supply was exhausted copper undecylenate ointment was to be used until more of the salicylanilide ointment could be furnished. By April 1, 1946, out of the 45 children 38, or 84 per cent, had been cured and only 7, or 16 per cent, were still under treatment. That is, during the period when salicylanilide ointment was used exclusively, November 1945 to April 1946, 84 per cent of those treated with it were pronounced cured. Over 30 per cent of these children were cured with less than 50 treatments, while few if any had over 100. (See the comments by Dr. McCallum.)

### COMPOSITION AND PREPARATION OF THE OINTMENTS

*Salicylanilide.*—An ointment prepared by the Dermatoses Section of the Industrial Hygiene Division containing salicylanilide, Hyamine 1622 and Carbowax 1500 in a special type of ointment base was the most efficacious preparation tried. The salicylanilide ointment was prepared as follows:

To 100 parts of molten Carbowax 1500 (Carbide and Carbon Chemicals Corp.) was added 5 parts of Hyamine 1622, 25 per cent (Rohm & Haas Company, Philadelphia), and 5 parts of salicylanilide ("Shirlan Extra," generously contributed by the E. I. du Pont de Nemours Company, Wilmington, Del.). The mixture was stirred until it became a homogeneous solution, then poured into jars and allowed to congeal.

*Copper Undecylenate.*—A special ointment prepared by the Dermatoses Section containing a saturated solution of copper undecylenate in Carbowax 1500 was next to the most efficacious preparation tried. Copper undecylenate was prepared as follows:

To 4.0 Gm. of sodium hydroxide pellets dissolved in 300 cc. of water was added 18.4 Gm. of undecylenic acid (Eastman Kodak Company). The cloud which first formed cleared quickly, yielding a translucent, soapy solution. To this was added a solution of 25 Gm. of copper sulfate (pentahydrate) in 250 cc. of water. A gummy precipitate formed immediately. The mixture was placed in an ice box for two hours; at the end of this period the gum had solidified. It was broken up with a spatula and the suspension was filtered. The solid so obtained was washed well with water and dried in the air. It consisted of a pale blue-green powder weighing 21 Gm., an approximately quantitative yield.

To 100 parts of Carbowax 1500 was added 10 parts of well powdered copper undecylenate, and the mixture was warmed

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until the carbowax had melted. It was then well stirred, the excess copper undecylenate allowed to settle and the pale blue supernatant liquid poured into jars and allowed to solidify.

*Pentachlorphenol Ointment.*—The pentachlorphenol was obtained from the Eastman Kodak Company. The procedure described in the previous paragraph was employed in preparing this water soluble ointment, using 1 part of pentachlorphenol to 100 parts of Carbowax 1500.

## CONCLUSIONS

The epidemic of ringworm of the scalp in Hagerstown, Md., during 1944-1945 was controlled in one year without barring infected children from school or other public places and with treatment of the disease only by topical applications.

An equal number of boys and girls were examined, yet there were six times as many boys infected as there were girls. Apparently the boys and girls had equal contact with one another in homes, in schools, on playgrounds and in the movies. Only in barber shops was there more exposure for the boys than for the girls. Nearly all the boys attended the barber shops, while few girls went to barber shops or beauty parlors. Approximately 65 per cent of the infected boys were infected only in the "clipper area." For these reasons and others there is a strong probability that the principal source of spread of infection was the barber's implements, especially the electric clippers. Tests made by a dermatologist of the United States Public Health Service disclosed that electric clippers can be sterilized by immersing them in petroleum oil (having a boiling point of 150 to 200 C.) kept at 100 C. and working the clippers for ten seconds while in the oil.

The two most efficacious remedies tried during the epidemic were (1) salicylanilide 5 per cent in Carbowax 1500 and (2) copper undecylenate saturated solution in Carbowax 1500.

## COMMENTS BY DR. JAMES A. McCALLUM

HEALTH OFFICER OF WASHINGTON COUNTY, HAGERSTOWN, MD.

The cooperation of the local medical society in connection with this study contributed greatly to its success. Before requesting the U. S. Public Health Service to assist in the control of this epidemic outbreak the medical society was informed as to the number of cases in local schools based on clinical examinations without the aid of the Wood light or of cultures. A number of the medical society members had treated in their private practice several of these children with commonly used fungicides without the slightest success. With this experience the society declared the epidemic to be a public health problem and requested the local health department to institute an experimental treatment and control program.

The society likewise approved inviting into the community any group or agency the health department might succeed in interesting in such a program. Members of the society suggested and approved a recommendation that all patients applying to them for treatment be referred to whatever experimental treatment and control center the health department succeeded in having set up. The society also appointed a committee of its members to work with the health department or other agency in forming general policies and administrative procedures. This committee was especially helpful in obtaining local financial assistance.

The action of the society in discontinuing the treatment of the disease in the offices of local physicians assured them of a sufficiently large group of infected children on whom to conduct exerimental studies and eliminated the possibility of children transferring from school treatment centers to private physicians' practices and vice versa.

TABLE 3.—*List of Medicaments Used and Their Relative Effectiveness Based on Last Medicament*

| | All Children Treated | | | Children Cured | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Medicament | Number of Treatments Given to All Children * | Number of Children Treated † | Average Number of Treatments per Child 1 ÷ 2 | Number of Treatments Given to Children Cured ‡ | Number of Children Cured § | Average Number of Treatments per Child Cured 4 ÷ 5 | Per Cent of Children Cured 5 ÷ 2 |
| Copper undecylenate ointment | 1,388 | 42 | 33 | 915 | 24 | 38 | 57 |
| Salicylanilide ointment | 3,360 | 83 | 40 | 1,872 | 47 | 40 | 57 |
| Pentachlorphenol ointment | 1,902 | 48 | 42 | 947 | 19 | 50 | 40 |
| Copper oleate ointment | 2,140 | 39 | 55 | 812 | 15 | 54 | 38 |
| Camphor phenol | 520 | 11 | 47 | 181 | 4 | 45 | 36 |
| Ointment 1373 | 962 | 18 | 53 | 220 | 6 | 37 | 33 |
| Proprietary solution 1 | 3,050 | 42 | 73 | 970 | 14 | 69 | 33 |
| Lane treatment | 2,178 | 27 | 81 | 593 | 8 | 74 | 30 |
| P. M. S. ointment | 792 | 22 | 36 | 187 | 6 | 31 | 27 |
| Cationic detergent 2 | 4,716 | 91 | 52 | 914 | 22 | 42 | 24 |
| Cationic detergent 1 | 7,287 | 122 | 60 | 1,581 | 29 | 55 | 24 |
| Proprietary ointment 3 | 12,450 | 188 | 66 | 3,349 | 44 | 76 | 23 |
| Proprietary ointment 2 | 4,582 | 98 | 47 | 1,037 | 20 | 52 | 20 |
| Colloidal iodine | 1,122 | 36 | 31 | 201 | 7 | 29 | 19 |
| Ointment 1316 | 545 | 24 | 23 | 91 | 4 | 23 | 17 |
| Cationic detergent 1, 2 wks. alternating with proprietary ointment 3, 2 wks. | 1,421 | 31 | 46 | 171 | 5 | 34 | 16 |
| Cationic detergent 3 | 423 | 13 | 33 | 0 | 0 | .. | 0 |
| Total | 48,928 | 445 | 110 | 14,041 | 274 | 51 | 62 |

* "Number of treatments given to all children" includes all treatments given with the specified medicament.
† "Number of children treated" includes all children treated with the specified medicament.
‡ "Number of treatments given to children cured" includes only those treatments given to the children cured with the specified medicament.
§ "Number of children cured" includes only those children cured while being treated with the specified medicament.

Since the official termination of the U. S. Public Health Service experimental study in November 1945, salicylanilide ointment has been used exclusively on the 45 children listed as still under treatment. At this time, March 8, 1946, 25 of these children are permanently cured and 11 are tentatively cured, leaving only 9 still under treatment.

Of the 72 children listed as not accepting treatment in the various centers and the 126 who discontinued treatment, all but 21 have either moved from the community or have accepted or renewed active treatments in health department centers. The increased favorable responses following the use of salicylanilide ointment facilitated our returning to or bringing to treatment for the first time the majority of those who refused treatment earlier or dropped out for various reasons. At present salicylanilide ointment is being used exclusively, and the rate of cures in the remaining group is highly satisfactory.

As a health officer I feel that the Dermatoses Section of the Industrial Hygiene Division of the U. S. Public Health Service has demonstrated in this community of approximately 40,000 that ringworm of the scalp (due to Microsporon audouini) can be controlled inexpensively and without excluding children from school during the course of treatment, which is still a long period in terms of school absences.

In working out this project, officers of the section worked at all times in close cooperation with members of the local medical profession, with school officials and with the health department.

## RINGWORM OF THE SCALP

### Clinical Data on Recent Cases; Experiences with Local Endocrine Therapy

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The countrywide epidemic of ringworm of the scalp which has been evident in New York for over two years has afforded an excellent opportunity for the further study of this disease. Signs of the epidemic were first observed in the spring of 1943. For the two years from July 1, 1943 to June 30, 1945 we have seen 312 patients with tinea capitis in the dermatology department of the New York Hospital. Most of these patients have been carefully studied both clinically and by laboratory methods.

#### CLINICAL DATA ON RECENT CASES

Contrary to our former observation [1] that scalp infections due to Microsporon audouini and those due to Microsporon lanosum are of equal occurrence, it is now shown (table 1) that in New York City during the past two years scalp infections caused by M. audouini were nine times more common than those due to M. lanosum. Cases of M. audouini infection were observed in children aged from 1 to 15. In comparing the age incidence between white and Negro children in the accompanying chart it is of interest that the incidence of infection in both groups reached its highest peak at age 8. The number of cases in white children did not materially slacken during the next two years; during the same period the number of cases among Negro children rapidly declined; only 2 cases were observed in Negro children older than 10 years, 1 aged 12 and 1 aged 15. It is consequently concluded that susceptibility to infection with M. audouini may be overcome at a somewhat earlier age in Negro children.

TABLE 1.—*Fungi Cultured from Scalp Infections*

| | Total No. | Distribution | |
|---|---|---|---|
| | | Localized | Disseminated |
| Microsporon audouini | 275 | 161 | 114 |
| Microsporon lanosum | 30 | 20 | 10 |
| Trichophyton sulfureum | 5 | 4 | 1 |
| Achorion schoenleinii | 2 | 1 | 1 |

The figures in table 2 verify the logical assumption that the longer the duration, the more extensive the infection. It also emphasizes the slowness of the spread. Thus if treatment is begun while the duration of the infection is three months or less, a predominant number of patients (8:1 in white boys, 12:1 in Negro boys and 15:1 in white girls) will present an infection localized in one part of the scalp. In infections in which the duration is over three months, multiple foci are more likely to be found; yet even among cases of longer duration there is still a significant number with a limited infection.

*Scalp Infection in an Adult.*—Only 1 instance of tinea capitis in an adult was noted. This patient has been presented at a meeting of a local society.[2] Because of the rarity of the occurrence [3] and because of interesting features concerned with the treatment, the case will be reported in detail in another communication, by Reiss and Klumpp.

*Involvement of the Eyelashes and Eyebrows.*—We did not observe any instances of infection in this region. This would seem to emphasize the rarity of cases which have been reported.[4]

*Infection of the Glabrous Skin.*—Microsporon audouini has not been given the reputation for causing tinea glabrosa that it deserves. We have observed 18 cases of tinea of the nonhairy skin due to M. audouini during this two year period. Eleven children (6 girls and 5 boys) had lesions of the smooth skin. Four girls were white and 2 were colored; the 4 boys were white. Only 3 of the 18 patients had a coincidental tinea capitis. Of the 7 affected adults, 6 were relatives of

TABLE 2.—*Influence of Duration of Infection Due to M. Audouini on Its Distribution*

| Duration | Distribution | Boys | | Girls | |
|---|---|---|---|---|---|
| | | White | Negro | White | Negro |
| Under 3 months | Localized | 81 | 12 | 15 | 3 |
| | Extensive | 10 | 1 | 1 | 2 |
| Over 3 months | Localized | 28 | 7 | 9 | 6 |
| | Extensive | 47 | 35 | 13 | 6 |

Aided by a grant from the John and Mary R. Markle Foundation.

From the New York Hospital and the Department of Medicine (Dermatology), Cornell University Medical College.

1. Lewis, G. M., and Hopper, M. E.: An Introduction to Medical Mycology, ed. 2, Chicago, Year Book Publishers, Inc., 1943, p. 47.

2. Lewis, G. M.: Tinea Capitis (Microsporon Audouini) Associated with Alopecia Areata, Arch. Dermat. & Syph. **51**: 288 (April) 1945.

3. Fox, H., and Fowlkes, R. W.: Ringworm of the Scalp in Adults, Arch. Dermat. & Syph. **11**: 446 (April) 1925.

4. Montgomery, R. M., and Walzer, E. A.: Tinea Capitis with Infection of the Eyelashes: Report of a Case, Arch. Dermat. & Syph. **48**: 40 (July) 1942. Silvers, S. H.: Microsporum Audouini Infection of the Eyelashes, ibid. **49**: 436 (June) 1944. Muskatblit, E., and Targan, N. A.: Ringworm of the Eyebrow, ibid. **52**: 116 (Aug.) 1945.

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children with tinea capitis. The seventh patient was an x-ray technician. We found that these infections showed considerable resistance to therapy. The lesions for the most part were only mildly inflammatory. This and the fact that some lesions contained infected lanugo hairs (which fluoresced) no doubt was responsible for the chronicity of the disease. At times the fungus could be cultured from the treated site even when no apparent infection remained. It would thus seem important to follow the progress of the patient by periodic culturing. The patient should not be discharged from treatment before at least one and preferably two negative cultures have been obtained. We have considered the possibility that partially treated patients with glabrous skin infections due to M. audouini have played a role in the spread of the scalp disease due to the same organism, although we have no definite evidence that such has been the case.

*Treatment of Tinea Capitis.*—The public health and preventive aspects of ringworm of the scalp have been considered in another communication.[5] Case finding by the examination at periodic intervals of school children, using for the purpose both cultural methods and filtered ultraviolet fluorescence, has proved to be of the utmost importance. With such a program infected children will be detected at an early stage of the disease and removed from contact with noninfected children.

As far as the actual treatment of the patients is concerned, we have found no new therapy which can offer as much promise of prompt cure as the regimen which includes epilation of the scalp hair by means of the roentgen rays. The importance of a rigid x-ray technic and observation in both the preirradiation and postirradiation periods is essential for a satisfactory result. A summary of our results both with x-rays and with other measures is briefly outlined in table 3. For both total and limited roentgenologic epilation we obtained cures in approximately 90 per cent of the patients in an average time of 9.1 and 13.8 weeks respectively. This technical x-ray work was shared by three persons. Our technic for the epilation of scalp hair when the infection is limited has been modified somewhat since our original publication [6] in that during the interval of three weeks following the administration of the x-rays to the limited area we apply grease each day to the entire scalp but avoid the use of soap and water. It is not advocated for general use, since good results need not be expected without particular attention to details and careful observation of the patient. In case of failure we have waited six months before subjecting the patient to a second treatment with x-rays. All 23 patients who received a second x-ray epilation were cured. The tendency of approximately 10 per cent of the patients to spontaneous recovery and consequent success with the use of local remedies alone is reflected in the 32 patients who were so cured in an average time of 8.6 weeks. It is of interest that Livingood and Pillsbury [7] reported cures from local measures alone in about one third of 125 scalp infections due to M. audouini after observation from three months to two years. So far we have no certain way to "find" these cases and it is not advisable to treat all patients locally before resorting to x-rays. Some but not all of these children were approaching puberty. We believe that children aged 12 or older might be given local remedies as a trial for several weeks. Failure to cure 34 patients (12 per cent) is attributable in 6 cases to inability to administer x-rays because the patient was too young to hold still; 18 patients failed to return for therapy after the first or second visits; 6 patients received an epilating dose of x-rays but thereafter did not return and the final result is unknown; and in 4 instances while a small residue of infection still remained after an x-ray treatment the patient stopped coming.

### EXPERIENCES WITH LOCAL ENDOCRINE THERAPY

*Local Use of Estrogens and Androgens.*—It is indisputable that cure by means of x-rays is far from ideal. Because of this, and since even in our clinic where patients with tinea capitis received special consideration there were occasional children who presented a problem in therapy, we undertook to evaluate the benefit to be derived from estrogens and androgens when applied locally to the infected scalp. Poth and Kaliski [8] and Barman [9] reported good clinical results from the administration by injection of estrogenic substance. These reports hardly fulfil all the requirements one would desire, such as the treatment of resistant infections, cultural studies, controls and adequate follow-up. Our previous experiences with estrogenic therapy by injection indicated that such therapy was not effective.[10]

TABLE 3.—*Therapy of Microsporon Audouini Infections*

| | Total | Cured | Average Time, Wks. | Not Cured |
|---|---|---|---|---|
| X-ray epilation (5 point technic)... | 122 | 110 | 9.1 | 12 |
| X-ray epilation (local)..... | 87 | 78 | 13.8 | 9 |
| 2d x-ray exposures *..... | 23 | 23 | .... | .. |
| Other measures..... | 32 | 32 | 8.6 | .. |
| Treatment not completed..... | 34 | ... | .... | 34 |
| Total..... | 298 | 243 | .... | 55 |

* This includes patients in previous categories and 3 patients who received their first roentgen treatment in other institutions.

*Preliminary Laboratory Tests.*—Using Microsporon audouini, Trichophyton gypseum and Trichophyton purpureum as test organisms, fungistatic and fungicidal tests were developed to inquire into the possible effect of estrogenic and androgenic drugs. There was a slight distinction to be noted between some of the plates, indicating some inhibition of growth by testosterone, diethylstilbestrol and ethynil estradiol, whereas no effect was noted from desoxycorticosterone acetate and alpha estradiol. Similar results were noted when Microsporon audouini was the test organism. None of the hormones revealed any decisive restraint of or lethal action on the test micro-organisms.

*Clinical Results.*—Of the 23 patients who were subjects of the clinical trial, only 2 were cured while under treatment. The time of application and the

5. Lewis, G. M.; Silvers, S. H.; Cipollaro, A. C.; Muskatblit, E., and Mitchell, H. H.: Measures to Prevent and Control an Epidemic of Ringworm of the Scalp, New York State J. Med. **44:** 1327 (June 15) 1944.
6. Lewis, G. M., and Hopper, M. E.: Ringworm of the Scalp: Successful Use of Roentgen Rays to Epilate Local Areas of Infection, Arch. Dermat. & Syph. **49:** 107 (Feb.) 1944.
7. Livingood, C. S., and Pillsbury, D. M.: Ringworm of the Scalp, J. Invest. Dermat. **4:** 43 (Feb.) 1941.
8. Poth, D. O., and Kaliski, S. R.: Estrogen Therapy of Tinea Capitis: Preliminary Report, Arch. Dermat. & Syph. **45:** 121 (Jan.) 1942.
9. Barman, M. J.: Tratamiento de las tiñas tonsurantes por las hormonas sexuales, Rev. méd. de Rosario **33:** 877 (Sept.) 1943.
10. Lewis, G. M., and Hopper, M. E.: Ringworm of the Scalp: III. Clinical and Experimental Studies in Types of Infection Resistant to Treatment, Arch. Dermat. & Syph. **35:** 460 (March) 1937.

drugs used are recorded in table 4. Epilation by means of forceps at each clinic visit supplemented the home application of the prescribed drug. In no patient did we observe any untoward systemic effect, such as enlarged breasts or vaginal bleeding. We do not attribute much if any significance to the 2 cures; it would be reasonable to assume that spontaneous cure due to other than specific factors is responsible.

## REPORT OF CASES

Three cases of ringworm are reported as illustrative of results obtained by endocrine therapy:

CASE 1.—Y. A., a Negro girl aged 2 years, had an area of tinea capitis 9 cm. in diameter. The infection was of two months' duration. Her brother also had a scalp infection and was cured by means of roentgen therapy. She had received local therapy from her local physician without effect. The cultural growth revealed Microsporon audouini. An attempt to irradiate the scalp was unsuccessful, as the child would not hold still. Beginning March 27, 1944, 1 mg. of diethylstilbestrol in petrolatum was rubbed in daily. No other salves were used. Manual epilation was also carried out. Some reduction in the number of infected hairs was reported. After eleven weeks the treatment was changed to 3 mg. of testosterone in ointment base once daily. This therapy continued for twelve weeks. The immediate effect appeared to be a loosening of the hair, so that hand epilation could be practiced to a limited degree. However, even this effect was lost, and local therapy using ammoniated mercury and salicylic acid was resorted to for over two months. Testosterone ointment using 7 mg.

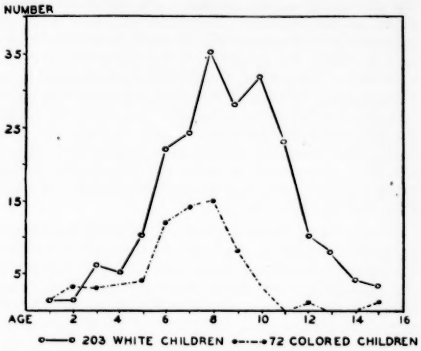
TABLE 4.—*Patients Treated with Estrogenic and Androgenic Hormones*

| | | | | Diethylstilbestrol | | | Testosterone | | |
|---|---|---|---|---|---|---|---|---|---|
| Case | Initials | Age, Yrs. | Sex | Mg. per Day | Time in Wks. | Results | Mg. per Day | Time in Wks. | Results |
| 1 | A. C. | 7 | ♀ | .. | .. | ..... | 5 | 3 | Not cured |
| 2 | E. W. | 10 | ♀ | 1 | 10 | Not cured | | | |
| 3 | I. S. | 8 | ♂ | .. | .. | ..... | 5 | 5 | Not cured |
| 4 | M. D. | 8 | ♂ | .. | .. | ..... | 4 | 4 | Not cured |
| | | | | | | | 7 | 1 | Not cured |
| 5 | J. D. | 10 | ♂ | .. | .. | ..... | 4 | 4 | Not cured |
| 6* | Y. A. | 2 | ♀ | 1 | 11 | Not cured | 3 | 12 | Not cured |
| | | | | | | | 7 | 5 | Not cured |
| 7 | C. B. | ½ | ♀ | 1 | 8 | Not cured | 1 | 12 | Not cured |
| 8 | B. S. | 2 | ♂ | 1 | 7 | Not cured | 1 | 1 | Not cured |
| 9* | M. S. | 2 | ♀ | 1 | 10 | Not cured | 1 | 4 | Not cured |
| | | | | | | | 7 | 10 | Not cured |
| 10 | J. O. | 3 | ♂ | .. | .. | ..... | 1 | 10 | Not cured |
| 11 | J. G. | 5 | ♂ | 1 | 16 | Not cured | | | |
| 12 | H. G. | 3 | ♀ | 1 | 16 | Not cured | | | |
| 13 | A. F. | 3 | ♂ | 1 | 6 | Not cured | | | |
| 14 | A. F. | 8 | ♀ | 1 | 12 | Cured | | | |
| 15* | J. Z. | 9 | ♂ | 1 | 9 | Not cured | 1 | 14 | Not cured |
| 16 | J. H. | 2 | ♂ | 1 | 14 | Not cured | | | |
| 17 | A. L. | 11 | ♂ | .. | .. | ..... | 5 | 4 | Not cured |
| 18 | P. D. | 11 | ♂ | 1 | 14 | Cured | | | |
| 19 | A. B. | 10 | ♂ | 1 | 11 | Not cured | | | |
| 20 | J. M. | 3 | ♂ | .. | .. | ..... | 1 | 12 | Not cured |
| 21 | E. L. | 6 | ♂ | 1 | 2 | Not cured | | | |
| 22 | J. P. | 11 | ♀ | 1 | 8 | Not cured | | | |
| 23 | M. P. | 31 | ♀ | .. | .. | ..... | 7 | 14 | Not cured |

* These cases are reported in more detail in the body of the paper.

of the drug each day was again given a trial for five weeks. There was no appreciable reduction in the amount of the infection.

CASE 2.—M. S., a white girl aged 2 years, had a ringworm infection for two months. The condition was present in an area 9 cm. in diameter over the vertex. The cultural diagnosis was M. audouini. Her sister aged 7 had a similar infection. She received ten weeks of treatment with diethylstilbestrol locally in the dosage of 1 mg. daily. No change was noted in the condition. Testosterone (1 mg. daily) was applied in a grease for four weeks. An x-ray epilating dose was then administered, but, while the uninfected hairs fell out, those which were infected did not epilate, nor could they be removed




Age incidence of 275 children with tinea capitis due to Microsporon audouini.

by adhesive tape or manual epilation. Another course of local application of 7 mg. of testosterone daily for over ten weeks again failed to show any appreciable effect.

CASE 3.—J. Z., a white boy aged 9 years, had a tinea infection of the scalp for over five months. The lesions were in five areas scattered over the occipital and parietal regions. The cultural diagnosis was M. audouini. Estradiol 1 mg. per day was applied topically for three weeks with apparent loosening of the hair. Diethylstilbestrol 1 mg. each day was used for six weeks followed by fourteen weeks of testosterone. There was apparently some reduction in the number of infected hairs but no more than would have been expected from using ammoniated mercury ointment.

## COMMENT

In these 3 cases, as in the other 20, the treatment was applied at home. The mothers were cooperative and we are reasonably certain that the treatment was administered as prescribed. These cases reveal the typical responses noted in the treatment of the other patients, namely an apparent loosening effect on the hair, allowing readier local epilation. Soon even this effect was lost. There was no evidence of absorption with enlargement of breast tissue.

## SUMMARY

In a clinical and laboratory study of 312 patients with tinea capitis observed over a period of two years, the predominant fungus was Microsporon audouini. The highest peak of infection was reached at age 8. Negro children overcame the susceptibility to infection at a slightly earlier age than white children. If "under three months" is used as a yardstick to judge early cases, the majority of such patients have the disease localized to only one part of the scalp. There were 18 cases of involvement of the glabrous skin by M. audouini, only 3 having a concomitant tinea capitis. Roentgen therapy is still considered superior to other forms of treatment and was responsible for 90 per cent

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of the cures in this series. Preliminary laboratory testing with estrogenic and androgenic substances showed that some hormones have fungistatic ability in vitro, but the results were disappointing when these hormones were applied in adequate dosage directly to the local areas of infection.

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## TINEA CAPITIS

### Its Treatment with Special Iodine and Dilute Acetic Acid

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In a paper in the *Archives of Dermatology and Syphilology* I [1] have reported my experiences in the treatment of tinea capitis in which 27 patients (45 per cent) of a total of 60 were cured. The present contribution records further trial of the same method, in which 47 additional patients (67 per cent) of a group of 70 were cured, a total of 74 since the inception of this method. The basic principles underlying this form of treatment have not been changed, although some modifications have been introduced which it is believed enhance its efficiency. In the statistical reports only those patients who carried out the treatment with reasonable regularity are included, as this appears essential for successful results.

#### FACTORS OF PHOTOSYNTHESIS IN IODINE THERAPY

Briefly, the principles involved in this method concern the use of iodine, a remedial agent acknowledged as definitely fungistatic and to a degree fungicidal for the ringworm fungus, and the enhancement of this activity through the application of photosynthesis, whereby it is assumed that the iodine molecule became a more active molecule (an activated molecule). At the onset of this consideration it is important to bear in mind that the fundamental reaction in photosynthesis is a photochemical one and that for its consummation a number of factors are required:

A. *Source of Energy.*—The quartz mercury vapor arc lamp was used with most of its energy in the 2,600 to 2,900 angstrom level. This was applied at a distance of 6 inches from the container for a time sufficient to dry the material.

B. *Oxygen and Iron.*—One of the outstanding characteristics of photodynamic processes is that they occur only in the presence of oxygen. Iron must also be present. To meet these requirements red blood cells were used, for the function of the red blood cells involves their physiologic oxygen-carrying capacity; the hemoglobin of the red blood cells, made up of the protein globin and the iron-containing compound known as heme, supplied the needed iron.[2] It has been shown that approximately 1 Gm. of hemoglobin will combine with 1.36 cc. of oxygen. Furthermore, it has been proved that the oxygen uptake during photodynamic action is the same for both intact or hemolyzed red blood cells.[3] The supply of oxygen was further enhanced through the use of magnesium dioxide, while sight was not lost of the fact that ultraviolet radiation produces a certain amount of ozone, a form of oxygen.[4]

C. *Spleen.*—Aqueous extract of spleen was used as a catalyst. Spleen is included in the group of organic compounds known as enzymes, catalysts produced as a result of cellular activity "but independent of the presence of living cells in their operation" (Waldschmidt-Leitz). It belongs to the subtype of enzymes known as oxidases, substances which are capable of transferring peroxide oxygen to oxidizable products. Spleen extract was added to this combination to enhance the transfer of nascent (free) oxygen of the superoxol compound (magnesium peroxide 25 per cent) to the iodine, thereby contributing to the continuation of the activity of photosynthesis (activating process) and also assisting the iodine in its functions, as both iodine and metallic peroxide [5] are oxidizing antiseptics. It has been established that most of the metallic peroxides release the nascent oxygen slowly, which is regarded as an advantage.

D. *Catalyst and Photosensitizer.*—Chlorophyll was used both for its property as an organic catalyst and for its photosensitizing power. Chlorophyll through its function as a catalyst can and does accelerate chemical reactions. The catalyst in this role remains unaltered, nor does it influence the composition of the substances or combinations formed. Chlorophyll in its role as photosensitizer promotes oxidation.

At this point it is thought expedient to offer an explanation of photodynamic action. Certain molecules widely different in chemical composition possess the nonspecific ability to photosensitize chemical reaction. This consists principally in the ability of the molecule to hold its quantum of absorbed energy of activation more or less intact, thus becoming an activated molecule. The molecule to which the energy of activation is transferred may participate in chemical reactions, the nature of which is determined by the chemical property of the molecule. At certain times the sensitizer molecule may enter into collision with an appropriate molecule of another kind and the energy of activation may be transferred to the other molecule; this is disclosed in the photosensitizer molecule through its ability to fluoresce. The preceding statement, summarized, means that it is my belief that the iodine molecule so treated, through becoming an activated molecule, is probably capable of more intensive action and effect.

E. *Wetting Agent.*—The idea of using a wetting agent in treatment of tinea capitis was rather casually suggested to me by Dr. Howard Fox. Wetting agents are substances which lower surface tension and thus permit the penetration of dyes and other substances.

From the Hersch-Razel Research Foundation and the ringworm clinic of the Skin and Cancer Hospital.
The iodine preparation used in this work was donated by the Hersch-Razel Research Foundation.
Dr. Lawrence Smith supplied the chlorophyll solution used in this preparation. Miss Esther Leisner, technician at the Skin and Cancer Hospital, did all the direct examinations.

1. Strickler, Albert: Treatment of Tinea Capitis with Special Iodine and Dilute Acetic Acid, Arch. Dermat. & Syph. **53**: 454 (May) 1946.
2. Harrow, Benjamin: Textbook of Biochemistry, ed. 2, Philadelphia, W. B. Saunders Company, 1940.
3. Blum, H. F.: Photodynamic Action and Diseases Caused by Light, American Chemical Society Monograph Series, No. 85, New York, Reinhold Publishing Corporation, 1941.
4. Arnow, L. E., and Reitz, H. C.: Introduction to Organic and Biological Chemistry, St. Louis, C. V. Mosby Company, 1943.
5. Goodman, L., and Gilman, A.: The Pharmacological Basis of Therapeutics, New York, Macmillan Company, 1941.

Such agents are made use of to a great extent in the textile industry. Since one of the great drawbacks to the local treatment for tinea capitis is the failure of the usual remedies to penetrate into the depths of the follicles, it was decided to include a wetting agent in the medicament with the thought that such an addition could assist in the penetration of iodine into the depths of the hair follicle and its contained hair. The particular agent selected was Deceresol.[6]

### THE REMEDY

The remedy employed in this study is a mixture consisting of iodine (fungistatic and to an extent fungicidal) 78 per cent, red blood cells (essential for photosynthesis) 2 per cent, sodium chloride (as isotonic solution and diluent) 1.9 per cent, chlorophyll (2 per cent in isotonic solution of sodium chloride, as a catalyst and photosensitizer) 0.07 per cent, Deceresol [6] (a wetting agent) 10 per cent, magnesium dioxide (a source of oxygen) 8 per cent, and spleen extract (an enzyme capable of transferring peroxide oxygen to oxidizable products) 0.005 per cent. The final product is reddish black and contains approximately 24 per cent iodine and 0.8 per cent inorganic material. The iodine mixture is incorporated in an oily vehicle, cottonseed oil, in the amount of 2 Gm. of the iodine to 30 Gm. of the cottonseed oil.

### METHOD OF TREATMENT

The treatment followed in both series consisted in clipping the hair of the scalp and keeping it short. The topical applications consisted in the use of acetic acid and of the iodine combination. First the acetic acid is rubbed into the scalp with a tooth brush for two minutes, with particular attention to the infected areas. Next an electric bulb of 150 to 200 watt strength is kept sufficiently close to the scalp to impart a distinct sensation of heat for two minutes. Then the iodine and oil combination is rubbed into the scalp with friction for two minutes by means of another tooth brush, and this is followed by the application of heat from the electric bulb for six minutes. These treatments are given twice daily. The scalp is washed every other day. The precautions about using a separate brush and comb, placing white paper in the hat when worn, changing the paper each day and burning the discarded paper napkin are all included in the instructions given to the parent or guardian of the patient. Acetic acid is used with the purpose of reducing the activity of the ringworm fungus, for it has been shown that this fungus will not thrive in an acid medium. Three per cent acetic acid was chosen, since this strength is regarded as efficient and has proved nonirritating. The use of heat from the electric bulb following the application of the iodine is for the purpose of possibly inducing some vaporization of the iodine, for substances in vapor form are rather easily absorbed.

The criteria used for the determination of a cure consisted in direct examination of the suspected hair as well as observation of the scalp hair with the filtered ultraviolet light. Both these methods were used in this series; however, in the first 7 cases of the first series only the direct examinations were made. Three consecutive negative observations by both methods were considered to indicate a cure, and examinations were made at four to five day intervals. It was found that there was a close agreement in the results by the two methods; however, it was observed that at times scales lying rather loose and close to the hair could not always be detected by filtered ultraviolet light, but direct examination showed such scales to contain fungi and the cultivation of such scales on Sabouraud's medium showed a growth in some instances. It is my opinion that both methods of examination should be used whenever possible to determine the cure of tinea capitis.

The combined series consisted of 115 children with ringworm of the scalp. In each case the suspected hairs were subjected to direct examination as well as to culture on Sabouraud's medium. Of the 74 patients cured, 73 had infections of the Microsporon audouini type and 1 of the Trichophyton gypseum variety. The patients were mainly boys and varied in age from 15 months to 11 years, with the vast majority being in the 5 and 6 year age groups. The average length of treatment was three to three and one-half months.

### COMMENT

A new combination of iodine is here proposed as a topical application for tinea capitis. The iodine mixture is used with acetic acid. The latter is for the purpose of influencing unfavorably the multiplication of the ringworm fungus. A 3 per cent solution of the acid is used, because after trial this strength was regarded as efficient and nonirritating. It is my belief, based on experience, that while ordinary iodine is practically impotent when used locally in tinea capitis the iodine in the combination proposed here is such that the iodine molecule becomes activated through photodynamic action and its activity as a fungicidal agent is enhanced. The iodine mixture used in the second series differed in some respects from that used in the preliminary report [1] in that a catalytic enzyme (spleen extract) was added. Its purpose was to help in the transfer of the nascent oxygen, thus assisting in the prolongation of the photosynthetic process and also helping the iodine to perform its function. The heat from the electric bulb applied after use of the iodine mixture has for its purpose an attempt to vaporize the iodine, just another approach to the problem of facilitating its penetration. The wetting agent, Deceresol,[6] formed part of this combination, and its function, through lowering the surface tension, was to assist in the penetration of the remedial agent into the hair follicle and its contained hair.

In the combined series of 115 children with tinea capitis, 74 patients (64 per cent) were cured as determined by three successive direct negative examinations and by three negative inspections of the scalp hair under filtered ultraviolet light.

### CONCLUSION

By means of a new topical applicaion for tinea capitis it has been possible to cure 74 (64 per cent) of a series of 115 patients affected by the disease. The addition of the peroxide oxygen catalytic enzyme and of a wetting agent to the iodine combination has enhanced the efficiency of this mixture.

327 South Sixteenth Street.

6. Deceresol, dioctyl ester of sodium sulfosuccinic acid, is manufactured by the American Cyanamid and Chemical Corporation.

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# LOCAL TREATMENT OF TINEA CAPITIS

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The recent widespread increase in fungous infections of the scalp has emphasized the need for a simple, effective method of treatment. From Jan. 1, 1943 to May 1, 1945 among the patients admitted to the Vanderbilt Clinic there were 928 new cases of tinea capitis in which the diagnosis was confirmed by identification of the fungi under the direction of Dr. Rhoda W. Benham. Of these 96.9 per cent were proved by culture to be due to infection with Microsporon audouini, for which the only reliable method of treatment is epilation with x-rays. In attempting to devise a simpler and safer method of treatment four means of attack seemed worthy of exploration: (1) the application of recently developed effective fungicides to the scalp, (2) the employment of special solvents and vehicles that might penetrate the hair follicle and the keratin of the hair, (3) the use of cataphoresis to carry the fungicides into the follicle and (4) the use of irritating medicaments to produce a folliculitis or actual kerion and thus to produce a cure.

## MATERIAL AND METHODS

Until the effectiveness of some such method was established, the heads of patients with more extensive infections were epilated with x-rays. Two hundred and two patients who on examination with the Wood light showed infection limited to five areas or less of the scalp were selected for the experimental procedures of this study.

1. *New Fungicides.*—Small groups of patients were treated with each of the following fungicides: dinitrocyclohexyl phenol, sodium propionate,[1] undecylenic acid,[2] benzoic and salicylic esters [3] and trinitrophenol. Streptothricin was also tried in a few cases. As somewhat encouraging results were obtained with the first three, a larger group was treated with each of them.

2. *Special Vehicles.*—As the work progressed the vehicle or solvent used with these fungicides was varied in an effort to increase their effectiveness. Propylene glycol, carbowax, acetone and ethyl and propyl alcohol in various strengths were employed. Dioctyl sodium sulfosuccinate and sodium tetradecyl sulfate were added as wetting agents in certain of the preparations.

3. *Cataphoresis.*—Sodium propionate, iodine, barium sulfide and other fungicides were tried on the scalp with this method.

4. *Irritants.*—A number of agents many of which were fungicidal were employed in high concentrations with the main purpose of inducing an inflammatory response. These included iodine as tincture or Lugol's solution, sodium hypochlorite, Nessler's reagent (potassium iodide and mercuric iodide in 7 per cent sodium hydroxide), saponated solution of cresol and the sulfides of barium and sodium.

The method of procedure with each case was as follows:

1. A history was taken. This included the age and sex of the patient, the duration and source of the infection, family contacts and the method of discovery.

2. An examination under the Wood light was made. Note was taken of the size and location of the areas showing the characteristic greenish fluorescence and the presence or absence of scattered infected hairs.

3. A microscopic examination was made of hairs in a 10 per cent solution of sodium hydroxide. This procedure was necessary to detect the occasional infections due to Trichophyton. The ectothrix forms of Trichophyton, such as Trichophyton gypseum, do not fluoresce under the Wood light. The endothrix variants, such as Trichophyton violaceum and tonsurans, likewise show no fluorescence, while Trichophyton schoenleinii shows only a grayish or pale green not at all like the bright green fluorescence of the Microsporon group.

4. A planting of hairs on culture mediums was made. Fluorescent hairs were planted on Difco glucose agar or Sabouraud's honey agar, and the tubes were checked under the Wood light to make certain that fluorescent hairs were present on the plant. In the rare case showing no fluorescence, hairs were epilated from clinically suggestive areas.

5. A description of the lesions was charted. We found a diagram of the scalp made with a rubber stamp a convenient aid in charting the location, the size and the number of areas involved and the presence or the absence of scattered fluorescent hairs. Note was made of inflammation, alopecia, broken off hairs and glandular involvement.

6. An identification of the organisms cultured was done by the method described by Benham [4] and generally required two weeks.

The following instructions were given to each patient:

1. Shave the head or cut the hair as short as possible with scissors.

2. Wash the scalp once a day with soap and hot water. Apply salve or paint the medicine on all diseased areas ringed with mercurochrome by the nurse at the clinic. Apply the medicine ½ inch beyond each diseased area. Once a week the medicine should be applied over the entire scalp.

3. Pluck all hairs within the red rings daily with eyebrow tweezers.

4. Make a tight fitting cap and wear it at all times so that hair will not fall off and infect other children. Wash the cap and boil it for three minutes every week.

5. The night before coming to the clinic wash the scalp with soap and water and apply no medicine.

Each patient was examined clinically and under the Wood light weekly and the results were charted. Infected areas were ringed with mercurochrome under the Wood light and the patients were instructed to pull out daily all hairs in the area. The remaining infected hairs were epilated manually in the clinic.

Cataphoresis was employed, using the technic described by one of us.[5] The scalp electrode was embedded in a rubber cup under which pads soaked in the medication to be used could be placed.

Freezing with ethyl chloride as suggested by Lewis and Morginson [6] in the treatment of dermatophytosis was also tried.

From the Department of Dermatology, Columbia University College of Physicians and Surgeons, and from Vanderbilt Clinic.

1. Some of the sodium propionate preparations were supplied by Mycoloid Laboratories, Inc., Little Falls, N. J.
2. Some of the undecylenic acid preparations were supplied by Wallace & Tiernan Products, Inc., Belleville, N. J.
3. The benzoic and salicylic esters were supplied by Cerbiniol Laboratories, Inc., New York.

4. Benham, R. W.: Laboratory Procedure in Diagnosis of Fungous Diseases, Proc. New York State A. Pub. Health Lab. **24:** 69-74, 1945.
5. Lowenfish, F. P.: Treatment of Chronic Dermatitis by Cataphoretic Method, Arch. Dermat. & Syph. **37:** 797-804 (May) 1938.
6. Lewis, J. H., and Morgimson, W. J.: Treatment of Trichophytosis with Ethyl Chloride, Arch. Dermat. & Syph. **50:** 243-244 (Oct.) 1944.

The cases reported as cured met the following criteria: (1) no clinical evidence of infection, (2) no fluorescence under the Wood light after all treatment had been stopped, (3) negative culture for fungus from areas known to have been infected and (4) observation for a period of two months during which the foregoing criteria were all negative.

TABLE 1.—*Results of Treatment with Dinitrocyclohexyl Phenol*

| Culture | Total Cases | Non-inflammatory | Inflammatory | Not Cured No. | Not Cured % | Cured No. | Cured % |
|---|---|---|---|---|---|---|---|
| M. audouini | 90 | 89 | 1 | 79 | 87.8 | 11 | 12.2 |
| M. felineum | 1 | 1 | .. | .. | .... | 1 | All |
| T. violaceum | 2 | 2 | .. | 2 | All | .. | .... |

TABLE 2.—*Results of Treatment with Sodium Propionate*

| Culture | Total Cases | Non-inflammatory | Inflammatory | Not Cured No. | Not Cured % | Cured No. | Cured % |
|---|---|---|---|---|---|---|---|
| M. audouini | 40 | 39 | 1 | 36 | 90 | 4 | 10 |
| M. felineum | 2 | 2 | .. | .. | .. | 2 | All |

## RESULTS

Table 1 shows the results obtained by using dinitrocyclohexyl phenol. This is a powerful fungicide extensively used in combating fungous parasites of plants and can be used on the skin in high concentrations without producing irritation. In our cases it was used as a 10 per cent solution of the triethanolamine salt in acetone or a 17 per cent solution of the same salt in 50 per cent alcohol. Of 90 patients with M. audouini infections 1 developed a kerion which in all probability was responsible for the cure. If that case is excluded as a spontaneous kerion, the percentage of cures is 11.2.

As Lewis and others [7] have pointed out, the cure of M. felineum infection can usually be obtained with local remedies. This proved true in our experience. We encountered 3 patients from the same orphanage with M. felineum infections. We were unable after several attempts to get any cooperation in carrying out local treatment, and the infections continued to spread. The danger of infecting other children, while not as great with the animal type of fungus as with the human, is still very real. For these reasons we resorted to x-ray epilation in these cases, and they are not included in the tabulated results.

Table 2 gives the results obtained with an ointment containing 16.4 per cent sodium propionate and 3.6 per cent propionic acid in a carbowax base or a solution of the same proportion in propanol with dioctyl sodium sulfosuccinate as a wetting agent. Other formulas, some containing 5 per cent zinc propionate, were used.

In table 3 will be found the results obtained with undecylenic acid. Nine different preparations of undecylenic acid were employed. In some of them the acid was dissolved in dilute alcohol, in others in acetone; in others it was prepared in a water soluble carbowax base or an emulsion ointment base. The concentration of undecylenic acid varied from 1 per cent to 10 per cent in the various preparations, and in all except one it was wholly or partially neutralized with the addition of triethanolamine. Twenty per cent zinc undecylenate was added to the 2 per cent triethanolamine undecylenate in one preparation.

7. Lewis, G. M.: Ringworm of Scalp: Curability, Without Depilatory Measures, of Infections Caused by "Animal" Microsporons, Am. J. M. Sc. **189:** 364-370 (March) 1935.

The results obtained from the use of a number of medicaments in small series of cases were in general not encouraging and for this reason these preparations were not tried in larger series. Four patients were treated with 13 per cent potassium permanganate using the technic described by Wilson.[8] Our experience with this technic in these 4 cases was that it failed to cure.

A preparation of benzoic and salicylic esters in propylene glycol has been used in a small number of cases. The spread of the infection seemed to be controlled, but no cures resulted. Our period of observation has not been as long with this as with the other remedies. One of us (J. L. M.) in another clinic has observed 2 apparent cures in a series of 30 cases but the cases were lost after three weeks of negative examinations under the Wood light.

Pain under the scalp electrode forced the discontinuance of cataphoresis as a method of treatment. The pain may have been real, owing to the hair interfering with the proper contact, or imaginary, from the presence for forty-five minutes of a complicated electrode on the head. The patients also complained of a metallic taste in the mouth. One patient out of 6 treated with cataphoresis was cured after six treatments. In another patient there developed inflammation and bogginess with persistent pain for a month, but hairs remained positive under the Wood light for more than one year, and now at the age of 14 years and 4 months the patient's hair has become negative.

The sodium hypochlorite, the Nessler's reagent, the xylene, the mercurial ointment, the emulsion of cresols and soap and the sodium sulfide were used in an attempt to produce a kerion reaction. This was not successful. The use of barium sulfide in a 10 to 50 per cent paste did, however, produce a cure in 4 out of 6 cases in which it was used. In 1 patient a painful kerion developed after the use of a 50 per cent paste, and cure resulted in one month. The patient had previously used 10 and 20 per cent barium sulfide paste. Two other patients using 20 per cent pastes were cured in three months. A fourth was cured in three months using a 10 per cent paste. The last 3 patients showed only mild inflammation with little discomfort. No appreciable beneficial effects were noted following the freezing with ethyl chloride of lesions due to M. audouini. The same was true when undecylenic acid solutions with $p_H$ 3.4 to $p_H$ 8.0 were used.

TABLE 3.—*Results of Treatment with Undecylenic Acid*

| Culture | Total Cases | Non-inflammatory | Inflammatory | Not Cured No. | Not Cured % | Cured No. | Cured % |
|---|---|---|---|---|---|---|---|
| M. audouini | 33 | 32 | 1 | 30 | 90.9 | 3 | 9.1 |
| M. felineum | 1 | 1 | .. | .. | .... | 1 | All |

TABLE 4.—*Results of Cultural Studies*

| Year | M. Audouini Number | M. Audouini Per Cent | M. Felineum (M. Lanosum) Number | M. Felineum (M. Lanosum) Per Cent | Other Organisms Number | Other Organisms Per Cent |
|---|---|---|---|---|---|---|
| 1931 | 39 | 70.0 | 17 | 30.0 | | |
| 1934 | 43 | 66.0 | 22 | 34.0 | | |
| 1936 | 24 | 71.0 | 10 | 29.0 | | |
| 1939 | 50 | 85.0 | 9 | 15.0 | | |
| 1943 | 303 | 98.4 | 5 | 1.6 | | |
| 1944 | 496 | 96.7 | 13 | 2.5 | 4 | 0.8 |
| 1945 (to May 1) | 101 | 94.4 | 6 | 5.6 | | |

8. Wilson, J. E.: Treatment of Ringworm of Scalp, M. Officer **69:** 197 (June 19) 1943.

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COMMENT

This experiment was begun with the full realization that cure with local measures of an appreciable number of patients with M. audouini infection was not to be anticipated. The increasing incidence of ringworm of the scalp caused by this organism is illustrated by the tabulation of cases at Vanderbilt Clinic in recent years (table 4). Treatment of patients in this large volume of cases by x-rays imposes a heavy load on the best equipped clinic, and for many patients safe and efficient treatment by radiation is not available. The spread of this disease will probably not be stopped until some simpler method for treatment of the infection is devised. The urgent need for devising this method prompted us to make a carefully controlled clinical and laboratory study using the various methods of procedure referred to previously.

An examination of table 4 shows the experience at Vanderbilt Clinic in the incidence of M. audouini infections as compared to those due to M. felineum from the years 1931 to 1945. The 34 per cent due to M. felineum for the year 1934 compared rather accurately with the 35 per cent reported by Lewis [7] for the same year and the same city.

Although our percentage of M. audouini infections was rising, it was 1943 before we arrived at as high a figure as that reported by Livingood and Pillsbury [9] from Philadelphia in 1940. The incidence of tinea capitis in boys in our series was 84.6 per cent and in girls 16.4 per cent. This is somewhat higher than the incidence reported by others.

The necessity for examination under the Wood light both for diagnosis and for follow-up is established beyond question. We have been impressed with the large number of patients who were discovered by routine examination under the Wood light in the school but who, when viewed clinically, gave not the slightest evidence of fungous infection of the scalp. If these children are classified as human carriers as suggested by Davidson, Gregory and Birt,[10] the need for routine examinations of school children is evident. Benedek [11] reported 25 per cent from one series and 53 per cent from another source as human carriers.

Livingood and Pillsbury [9] reported that 27 per cent of M. audouini infections were cured either spontaneously or with local remedies. In our experience we were able to produce a cure in only 10 per cent of our cases, the percentage being approximately the same for the different medicaments, as may be seen in the first three tables.

Recent work on the fungicidal action of fatty acids led to the hope that they might prove effective in the treatment of tinea capitis.

As early as 1899 Clark [12] stated that, among the many chemicals which he tried, the fatty acids had an inhibitory effect on fungi. Since the report of Kiesel [13] in 1913 on the inhibitory effect of fatty acids on Aspergillus niger, a number of papers have appeared on the toxicity of these acids for molds and for fungous parasites of plants. According to Kiesel and most subsequent observers, the fungistatic activity of the fatty acids increases as the number of carbon atoms in the aliphatic chain increases up to 11 or 12. Undecylenic acid has been reported to be the most active by several observers. This work has recently been reviewed by Rigler and Greathouse.[14]

Peck and Rosenfeld [15] in 1938 studied the inhibitory effect of these acids and their salts on Trichophyton gypseum and Epidermophyton inguinale. Sodium undecylenate appeared the most powerful of the fungistatic agents studied. In the following year Peck and his associates [16] reported encouraging results in the treatment of superficial fungous infections with sodium propionate in the form of a tincture, a powder or an ointment. They also used a mixture of several acids which they found present in human sweat.

In 1943 Keeney [17] reported the fungicidal and fungistatic effect of sodium propionate on many fungi pathogenic to man. In 1944 he [18] published a comparison of the activity of sodium soaps of numerous other fatty acids. Keeney and his associates [19] have reported excellent clinical results in the treatment of superficial fungous infections in man with sodium propionate and undecylenic acid preparations.

Of the many fungicides which were each tried in only a few cases, none showed evidence of outstanding effectiveness. Of the three preparations for which results were compared more thoroughly (tables 1, 2 and 3), the percentages of cure were so nearly identical that the results suggested strongly that cure depended not on the kind of fungicide used but on some other factor, which quite probably was the thoroughness of the manual epilation. However, the fungicide seemed to prevent the spread of the infection to new areas in most cases.

As our observations were directed chiefly at a comparison of the different fungicides, it was impossible to make an accurate comparison of the effect of different solvents or vehicles. However, we used a solution of trichlorphenol in acetone, a solution of triethanolamine undecylenate in alcohol, a solution of sodium propionate and propionic acid in propanol with dioctyl sodium sulfosuccinate as a wetting agent, a solution of salicylic and benzoic esters in propylene glycol, an ointment containing zinc undecylenate with sodium tetradecyl sulfate as a wetting agent and an ointment containing sodium propionate, propylene glycol and carbowax. There was no evidence that these agents effectively increased the penetration of the fungicide. One cannot, however, from these limited observations conclude that these or similar penetrating agents could not be effectively used by varying the technic of their application.

9. Livingood, C. S., and Pillsbury, D. M.: Ringworm of Scalp: Prolonged Observation, Family Investigation, Cultural and Immunologic Studies in 130 Cases, J. Invest. Dermat. **4:** 43-57 (Feb.) 1941.

10. Davidson, A. M.; Gregory, P. H., and Birt, A. R.: Treatment of Ringworm of Scalp by Thallium Acetate and Detection of Carriers by Fluorescence Test, Canad. M. A. J. **30:** 620-624 (June) 1934.

11. Benedek, Tibor: Contribution to Epidemiology of Tinea Capitis, Mycologia **36:** 598-626, 1944.

12. Clark, J. F.: Electrolytic Dissociation and Toxic Effect, J. Phys. Chem. **3:** 263-316, 1899; Toxic Effect of Deleterious Agents on Germination and Development of Certain Filamentous Fungi, Botan. Gaz. **28:** 289-327, 378-402, 1899.

13. Kiesel, A.: Recherches sur l'action de divers acides et sels acides sur le développement de l'Aspergillus niger, Ann. Inst. Pasteur **27:** 391-420, 1913.

14. Rigler, N. E., and Greathouse, A.: Chemistry of Resistance of Plants to Phymatotrichum Root Rot: VI. Fungicidal Properties of Fatty Acids, Am. J. Botan. **27:** 701-704, 1940.

15. Peck, S. M., and Rosenfeld, H.: Effects of Hydrogen Ion Concentration, Fatty Acids and Vitamin C on Growth of Fungi, J. Invest. Dermat. **1:** 237-265 (Aug.) 1938; correction, ibid. **1:** 398a (Oct.) 1938.

16. Peck, S. M.; Rosenfeld, H.; Leifer, W., and Bierman, W.: Role of Sweat as Fungicide, with Special Reference to Use of Constituents of Sweat in Therapy of Fungous Infections, Arch. Dermat. & Syph. **39:** 126-148 (Jan.) 1939.

17. Keeney, E. L.: Fungistatic and Fungicidal Effect of Sodium Propionate on Common Pathogens, Bull. Johns Hopkins Hosp. **73:** 379-390 (Nov.) 1943.

18. Keeney, E. L.: New Preparations for Treatment of Fungous Infections: In Vitro and In Vivo Experiments with Fatty Acid Salts, Penicillin and Sodium Sulfathiazole, J. Clin. Investigation **23:** 929-930 (Nov.) 1944.

19. Keeney, E. L.; Ajello, L., and Lankford, E.: Studies on Common Pathogenic Fungi and on Actinomyces Bovis, Bull. Johns Hopkins Hosp. **75:** 377-392 (Dec.) 1944. Keeney, E. L., and Broyles, E. N.: Sodium Propionate in Treatment of Superficial Fungous Infections, ibid. **73:** 479-487 (Dec.) 1943. Keeney, E. L.; Ajello, L.; Broyles, E. N., and Lankford, E.: Propionate and Undecylenate Ointments in Treatment of Tinea Pedis and In Vitro Comparison of Their Fungistatic and Antibacterial Effects with Other Ointments, ibid. **75:** 417-439 (Dec.) 1944.

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The cure of 4 of 6 patients with the use of barium sulfide pastes is encouraging. Unfortunately, owing to war priorities our supply of barium sulfide was limited and hence our series of cases is too small to warrant drawing any definite conclusions. Barium sulfide has been well known as a depilatory agent. Clark [20] states that it dissolves the hair shaft without damaging the hair follicle and concludes that the apparent baldness is analogous to the result of shaving. In the 3 cases in which 10 to 20 per cent pastes produced cure of the tinia capitis in three months, there was only slight inflammation and little discomfort. In the case in which the 50 per cent paste produced a kerion with cure in one month the pain was severe enough to prevent routine use of this strength. Further studies using this agent are being carried on and will be reported at a later date.

We consider the manual epilation of all fluorescent hairs of paramount importance in connection with all forms of local therapy. However, stubborn cases are encountered in which one or two positive hairs will persist in the same area week after week. We have followed some of these cases for as long as a year. They may become negative to the Wood light for several weeks at a time only to recur in the same areas. The difficulty probably lies in the hairs breaking off, leaving infected roots which gradually grow out. In this connection sodium propionate appeared to have one advantage. After this substance had been used, manual epilation seemed to be done with more ease and with less pain than with any of the other medicaments used.

The danger of overoptimism in interpreting negative examinations under the Wood light in patients under treatment must be emphasized. We have had many examples in which one, two or three weekly examinations would be negative, only to be followed by positive ones again when treatment and epilation were stopped. We consider two months of observation with negative observations a minimum criterion for cure.

As microsporon infections of the scalp heal spontaneously with the onset of puberty, we have excluded all patients above 14 years of age from those listed as cured.

The ideal local remedy would be a fungicidal or fungistatic substance which could be incorporated in a solvent capable of penetration into the hair follicles and the keratin of the hair. In our experience with the methods used we have not found this agent. It can be definitely stated that, with local remedies daily shampoo and manual epilation as advised, the spread of the infection can be prevented in the majority of cases and a small percentage cured.

### CONCLUSIONS

Microsporon audouini infection was present in 96.9 per cent of the cases reported, and the following conclusions refer to this type of infection:

1. Of the numerous fungicides employed in small groups of cases, none appeared outstanding. Of three fungicides whose results were more thoroughly compared, none was sufficiently effective to be of practical value in the treatment of this disease.

2. The cures obtained seemed to depend on the thoroughness with which manual epilation was carried out rather than on the fungicides employed.

3. However, even the most careful manual epilation failed to cure the infection in many cases.

4. Although the fungicides failed to cure in the majority of cases, they apparently served in most instances to prevent spread of the infection to new areas of the scalp. For this purpose they are an essential adjuvant to manual epilation, but iodine or mercury seem as effective as any of the newer fungicides which were tried.

20. Clark, A. J.: Applied Pharmacology, Philadelphia, P. Blakiston's Son & Co., 1940.

## STREPTOMYCIN IN THE TREATMENT OF INFECTIONS

### A Report of One Thousand Cases

THE COMMITTEE ON CHEMOTHERAPEUTICS AND OTHER AGENTS, NATIONAL RESEARCH COUNCIL: CHESTER S. KEEFER, M.D., CHAIRMAN; FRANCIS G. BLAKE, M.D., NEW HAVEN, CONN.; JOHN S. LOCKWOOD, M.D., NEW HAVEN, CONN.; PERRIN H. LONG, M.D., BALTIMORE; E. K. MARSHALL JR., M.D., BALTIMORE, AND W. BARRY WOOD JR., M.D., ST. LOUIS

(Concluded from page 11)

### STREPTOMYCIN IN TUBERCULOSIS

Experimental studies by Feldman and Hinshaw [16] have demonstrated that streptomycin has a powerful effect in inhibiting the growth of tubercle bacilli in experimental tuberculosis of guinea pigs. Many pigs can be saved by treatment and in 30 per cent the organisms cannot be isolated from the organs of the surviving animals. Cooke, Dunphy and Blake [17] have reported a bacteriologic and clinical recovery in a patient with tuberculous meningitis. This observation demonstrates the striking effect of streptomycin on the tubercle bacillus.

In a report to the Committee on Chemotherapeutics and Other Agents on June 12, 1946 Dr. Hinshaw discussed the results of his studies of streptomycin in patients with various forms of tuberculosis. His comments, which were based on observations made during one and a half years, can be summed up as follows:

Seventy-five patients have been studied. Three patients with miliary tuberculosis without clinically demonstrable meningitis were treated. All these patients showed striking improvement of the pulmonary lesions by x-ray while under treatment. All of them died despite regression of the lesions in the lungs by x-ray. Corresponding with the improvement they showed a reduction of fever from an average of 102 to 104 F. to normal within one to four weeks. In each instance evidence of tuberculosis in the substance of the brain was present at necropsy, which was possibly adequate to account for death. There were caseous foci throughout the brain substance. When examined histologically the lesions in the brain substance exhibited no evidence of any tendency toward healing; that is to say, they showed a progressive caseous tuberculosis.

There were 7 patients with meningitis. One died on the fifth day of treatment. The patient was an infant suffering from tuberculous meningitis associated with miliary tuberculosis. This patient showed no evidence of any beneficial effect. The other 6 showed evidence of clinical improvement. Four of these patients are still

16. Feldman, W. H., and Hinshaw, H. C.: Effects of Streptomycin on Experimental Tuberculosis in Guinea Pigs: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **19**: 593-599 (Dec. 27) 1944. Feldman, W. H.: Hinshaw, H. C., and Mann, F. C.: Streptomycin in Experimental Tuberculosis, Am. Rev. Tuberc. **52**: 269-298 (Oct.) 1945.

17. Cooke, R. E.; Dunphy, D. L., and Blake, F. G.: Streptomycin in Tuberculous Meningitis: A Report of Its Use in a 1 Year Old Infant, Yale J. Biol. & Med. **18**: 221 (Jan.) 1946.

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living; they are the only ones who received streptomycin intrathecally as well as intramuscularly.

The outlook with regard to eventual prognosis in these 4 patients is extremely doubtful. One is blind, 1 is deaf, 1 has pronounced bulbar symptoms with dysarthria and there is some question of mental retardation. All 4 patients have had normal temperatures for weeks. One has no residual neurologic sign except paralysis of an eye muscle. Only 1 has a normal spinal fluid that was formerly grossly abnormal. The others still show an increased protein and an increased cell count, but the sugar is usually normal. It was impossible to say how the abnormalities should be interpreted, but Dr. Hinshaw had never known tuberculous meningitis to behave in that manner, and he was of the opinion that streptomycin has a palliative benefit in the usually fatal tuberculous meningitis. The clinical results were most striking in the patients who received both intramuscular and intrathecal streptomycin daily.

Twenty-four cases of pulmonary tuberculosis have been studied. In general, patients with a grave prognosis were selected for investigation; that is, patients who had not improved on conventional forms of therapy. Patients who had had collapse therapy were excluded from the study.

Five are listed as failures. Two of these are so regarded because they died, although they showed some improvement by x-ray prior to death and were in the terminal stages of their infection prior to treatment. The other 3 were regarded as failures since they showed no benefit, although they also got no worse. So far Dr. Hinshaw has not observed pulmonary tuberculosis extending into previously uninvolved areas of lung during streptomycin treatment, in spite of the fact that lesions were extending prior to institution of therapy. He has witnessed recurrence of progression of tuberculosis following the discontinuance of therapy, when beneficial effects had been observed while under treatment. This occurred in 4 of 19 patients who showed regression of the disease process while under treatment. This was considered to be an important observation because most of the patients who have continued to show a positive sputum have developed drug resistant strains of organisms as determined by examination of sputum contents. However, no increase in the spread of the lesions has been noted in patients who have developed so-called drug resistant strains. It is possible that this is being seen in patients with renal tuberculosis who have been under treatment for a year. One patient is now showing more positive urines than previously. However, in pulmonary disease it has not been observed.

Patients who continued to show positive sputum have organisms resistant to streptomycin in spite of the fact that they do not regress but in fact progress. The method of isolating drug resistant strains is a selective one. It is not known of what significance drug resistant strains are in tuberculosis.

In addition to the strictly pulmonary form of tuberculosis, 6 patients had tuberculosis of the upper and middle respiratory tract, including the larynx, hypopharynx, trachea and larger bronchi, with similar lesions. All these ulcerating lesions in the air passages were open to direct visual examination. So far these lesions have been observed to heal within three to four or six weeks.

Eight patients with tuberculous empyema have been treated. Only 1 has shown any improvement. Intrapleural streptomycin in tuberculous empyema has been a failure. Again, this may be explained because fluids are likely to be acid in reaction. One patient who improved had a tuberculous empyema that had been unroofed so that the pleural cavity could be seen and sprayed with streptomycin through an atomizer. This patient had had a bronchopleural fistula for four years. There was no indication of improvement prior to streptomycin therapy. Within three weeks of instituting streptomycin therapy the bronchopleural fistula closed, and it has remained closed for five to six months.

Eight cases with tuberculous sinus tracts, mostly traceable to lymph nodes or sinus of the chest wall, and in 1 leading to tuberculous pericarditis, were treated. In 7 of these cases there has been at least temporary closure. There was a tendency in this group to recurrence when streptomycin was discontinued. These cases serve as a good test of drug resistance because at the time of recurrence they were treated a second time and closure was obtained on this occasion in 3. Some of the patients have not returned for a check-up.

Fourteen cases of renal tuberculosis have been studied. Six of them showed no permanent benefit other than subjective temporary relief. Eight showed some palliative benefit, as demonstrated by either reduction or disappearance of tubercle bacilli from the urine as determined by direct smear. Only 2 of these patients who improved, however, have had consistently negative guinea pig tests for prolonged periods. In these 2 patients it is possible that the disease is in a state of temporary arrest. In the others the improvement was based on reduction of the amount of pus in the urine and of urinary frequency and an increase in the capacity of the bladder. None of these patients have been treated surgically, since all were considered inoperable.

Three cases of tuberculous peritonitis, 1 being complicated by pericarditis, were treated. Two showed evidence of improvement. It was difficult to know what was going on in the peritoneum, and this type of tuberculosis was not considered particularly favorable for treatment.

Three patients with skin tuberculosis of the lupus vulgaris type were treated. Only 1 showed improvement, and in this case the lesions regressed. The other 2 did not receive very prolonged treatment, being treated early in the program and only for two or three weeks.

Four patients with tuberculosis of the bones and joints were studied. Two were regarded as improved.

In summing up, Dr. Hinshaw expressed the opinion that, if his work is confirmed, streptomycin is very likely to prove valuable as a palliative remedy in tuberculosis, at least because of its apparent suppressive action. In his experience it did not eradicate infection. Clinically, such a suppressive measure would be of tremendous value as a stopgap measure to be taken prior to or following other forms of treatment, including surgery. It has not been used at the Mayo Clinic in combination with surgery. In 1 case it was done so that the appearance of the lung could be observed; grossly it was destroyed by caseous tuberculosis.

As part of a study on chronic toxicity of crystalline streptomycin, Dr. Walsh McDermott of the New York Hospital reported to the Committee the following observations on 12 patients with tuberculosis who had received streptomycin:

These patients were treated for sixty or more days with 3 Gm. a day. All of them had active pulmonary tuberculosis. Four had hematogenous tuberculosis as

well and developed evidences of neurologic involvement during the course of miliary tuberculosis. Most of the patients were febrile while in bed and were subacutely ill in terms of general infection.

The 4 hematogenous cases, 3 of miliary type, all showed almost complete disappearance of x-ray evidence of miliary tuberculosis. In a case in which miliary tubercles were present in the eyegrounds a decrease in their size was observed. Coincidentally there was almost complete remission of systemic evidences of infection. The fever decreased to normal or near normal, and the 4 patients appeared to be having a temporary remission of their disease. Two patients (an infant and an adult) developed meningitis or evidence of neurologic involvement during intramuscular therapy. The infant received five weeks of intramuscular therapy, and the x-ray signs of miliary tuberculosis cleared up completely. Therapy was discontinued for ten days and then resumed. After a second period of parenteral therapy the patient was found to have abnormal changes in the cerebrospinal fluid without clinical evidence of meningitis. She received a long period of intrathecal as well as intramuscular therapy, since which time intrathecal therapy has been omitted for a month and parenteral therapy for two weeks. She never had any clinical signs of meningitis at any time and on June 1 appeared to be neurologically and psychologically normal. On August 1 there were signs of a recurrence of the meningitis and treatment was resumed. The outcome is not known at the time of this publication.

The adult patient who improved was desperately ill with miliary tuberculosis and lymphatic tuberculosis. The temperature averaged 105 F., and he was extremely ill for a period of one to two weeks. A remission of the temperature occurred within three or four days of institution of streptomycin therapy, but during the next four weeks he began to have a low grade fever, developed headache and was found to have 175 cells in the cerebrospinal fluid. He was put on intrathecal administration for twenty-eight days, with a remission of the symptoms of meningitis.

One patient with hematogenous tuberculosis—not true miliary tuberculosis—had an associated pericarditis with effusion, requiring pericardial taps every forty-eight to seventy-two hours. After administration of streptomycin therapy there was a remission of the signs of infection and considerable improvement in the pericarditis to the extent that no tappings were required for fifty-five days.

In addition there were 8 patients with exudative pulmonary tuberculosis, some with cavitation in which evidence of improvement and resolution of the exudative process and reduction in the size of the cavity were observed. There was 1 case of cavity reduction, apparently resulting from bronchial tuberculosis. One patient with caseous pneumonia has done the least well in that there was a reduction in the size of the lesion but no evidence of improvement. One patient with an exudative process ruptured the pleura on the seventh day of therapy and never developed empyema, which although a negative observation is most unusual.

In summary, Dr. McDermott expressed the opinion that streptomycin exerts a definite action on the tuberculous process. It was most striking in hematogenous lesions, was also noticeable in the exudative moderately advanced type of tuberculosis and was less striking in the patients with a caseous type of process. The effect on the central nervous system infection was impressive but may not be sustained.

*Comment.*—From the reports of Hinshaw and McDermott it appears that streptomycin has a palliative effect in patients with tuberculosis. The results that have been observed in miliary tuberculosis, in tuberculosis of the meninges and in tuberculosis of the larynx, skin and renal tract are highly suggestive that streptomycin exerts a bacteriostatic effect on the growth of the tubercle bacillus in man. The same can be said for exudative pulmonary tuberculosis. The time dose relationship has not been worked out in detail. It is certain, however, that a minimum period of treatment should be three to six months with doses of 1.5 to 3.0 Gm. a day. Only additional studies of well controlled patients will define the place of streptomycin in the treatment of tuberculosis.

### GENERAL COMMENT

From the evidence accumulated so far it is clear that streptomycin is the best chemotherapeutic agent available for the treatment of tularemia. Extremely favorable results have been obtained in the treatment of H. influenzae meningitis when both intramuscular and intrathecal injections of streptomycin are used and when treatment is started early in the course of the disease. In all these cases careful bacteriologic studies should be made to detect the occurrence of superinfections due to streptomycin resistant but penicillin sensitive infections such as those due to the staphylococcus. One should also be watchful for the development of streptomycin resistant strains so that other forms of treatment such as type specific serum and sulfadiazine can be used if streptomycin fails.

Streptomycin should be used in all cases of bacteremia due to gram-negative bacilli, since the evidence is good that in many cases the streptomycin exerts a favorable effect in clearing the blood of organisms and influencing the local infection. This is especially true when the primary lesion is in the genitourinary tract.

In the case of urinary tract infections, it is plain that streptomycin is effective in many cases in which the sulfonamides have failed. The limiting factors include variations in the resistance of various microorganisms to streptomycin, the presence of foreign bodies or tumors in the genitourinary tract and obstruction to the free flow of urine. The development of resistance in vivo is often extremely rapid, and the change in the bacterial flora of the urine after streptomycin treatment is very striking.

The results in the treatment of typhoid, Salmonella infections and brucellosis have been disappointing in that there is no convincing evidence that the course of the disease in any of these infections is shortened. Too few patients with typhoid have been treated to ascertain whether the fatality rate can be reduced, and patients with brucellosis have not been followed long enough to determine whether the relapse rate can be reduced. In any event no dramatic results have been observed in any of these infections.

Peritonitis due to perforative lesions in the gastrointestinal tract needs additional study for the reason that experimentally produced peritonitis in animals responds very well to streptomycin treatment and that the results in patients with peritonitis are highly suggestive of its beneficial effect.

All patients with meningitis due to gram-negative bacilli should be treated with streptomycin for the reason that it is the drug of choice and the results have been highly satisfactory.

Diseases of the pulmonary tract due to gram-negative micro-organisms need to be studied much more exten-

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sively, with systemic as well as local treatment (inhalation). Friedländer's bacillus and H. influenzae bacillus pneumonia in the acute stage respond well.[18] In the chronic stage the results are transitory and inconclusive.

Tuberculosis of various organs needs to be studied more extensively with streptomycin. A long range program should be planned and the patients followed for a minimum period of five years. From the experience which has accumulated so far, it appears that a minimum period of three to six months' treatment will be required and in some cases it will be necessary to treat patients for a longer time. Since streptomycin has an inhibitive effect on the growth of the tubercle bacillus, and since the exudative lesions do not progress while the patient is under treatment, the agent should be helpful in tuberculosis when it is combined with other established methods of treating this infection.

### DOSAGE

There are many practical as well as theoretical problems concerned with the proper dosage of streptomycin in a given case. Such factors as the species of infecting organism and its sensitivity to streptomycin, the anatomic location of the infection, the presence of bacteremia and the weight and age of the patient must all be taken into account. It is desirable to use an amount of streptomycin such that the concentration in the blood or tissues will be sufficient to inhibit the growth of the infecting organism.

Micro-organisms that are susceptible to the action of streptomycin vary widely in their sensitivity. Indeed, various strains within a given species vary considerably in their susceptibility to the drug, and there is some evidence that some cells within a single colony are more resistant than others. A guide to the range of sensitivity is given in table 9.[19] It should be remarked that the range of sensitivity is so great that each infecting organism should be tested before treatment and the dosage planned accordingly. It has been demonstrated that many strains of organisms that are susceptible to 5 or 10 micrograms of streptomycin per cubic centimeter often acquire resistance in vivo to 200 to 500 or even 50,000 micrograms per cubic centimeter. It has also been demonstrated that in the presence of blood or serum the tolerance of micro-organisms to streptomycin may be increased four to eight times. It is well, therefore, to maintain a concentration of streptomycin in the blood four to eight times that necessary to inhibit completely the organisms in vitro. It should be recalled that 4 to 6 Gm. daily is the usual maximum tolerated dose for most patients, although as much as 10 Gm. a day has been given to a few patients without ill effects.

Aside from the fact that resistance of infecting organisms to streptomycin occurs rapidly when all infecting organisms are not eliminated, there is another feature that should be mentioned with respect to the importance of using maximum doses at the beginning of treatment; namely, the so-called stimulating effect of streptomycin on the growth of bacteria. The experimental studies of Welch, Price and Randall[20] should be taken into consideration in the use of streptomycin. These investigators have shown that "streptomycin at certain concentration levels when injected intraperitoneally in mice infected with E. typhosa increases rather than decreases the fatality rate." Their experiments demonstrated quite clearly that, when E. typhosa and streptomycin were given by the intraperitoneal route to white mice, at certain concentration levels of streptomycin the organisms actually underwent a stimulation resulting in a larger number of fatalities than would have occurred if the streptomycin had been withheld. On the basis of these observations Welch and his associates suggested that the establishment of proper treatment schedules might result in clinical cures in conditions apparently refractory to streptomycin. They further

TABLE 9.—*Range in Sensitivity of Gram-Positive and Gram-Negative Bacteria and Actinomycetes to the Bacteriostatic Action of Streptomycin* *

| | Micrograms per Cubic Centimeter | |
|---|---|---|
| **Gram-Negative Organisms** | | |
| Aerobacter aerogenes | 0.5 | 64.0 |
| Bacillus anthracis | 0.375 | |
| Brucella abortis | 0.5 | 3.75 |
| Brucella melitensis | 0.5 | |
| Brucella suis | 0.5 | |
| Eberthella typhi | 1.0 | 37.5 |
| Erysipelothrix muriseptica | 2.5 | |
| Escherichia coli | 0.3 | 3.75† |
| Escherichia communior | 1.0 | 4.0 |
| Hemophilus influenzae | 1.56 | 5.0 |
| Hemophilus pertussis | 1.25 | 3.0 |
| Klebsiella ozogenes | 0.375 | 1.5 |
| Klebsiella pneumoniae | 0.025 | 256 |
| Malleomyces mallei | 10.0 | >10.0 |
| Neisseria gonorrheae | 5.0 | |
| Neisseria intracellularis | 5.0 | |
| Pasteurella lepiseptica | 0.5 | 2.5 |
| Pasteurella pestis | 0.75 | 1.5 |
| Pasteurella tularensis | 0.15 | 0.3 |
| Proteus vulgaris | 0.4 | 3.2 |
| Pseudomonas aeruginosa ‡ | 2.5 | 25.0 |
| Salmonella aertrycke | 4.0 | 10.0 |
| Salmonella enteritidis | 0.5 | |
| Salmonella schottmülleri | 2.0 | |
| Salmonella suipestifer | 60.0 | |
| Shigella paradysenteriae | 0.25 | 3.75 |
| Vibrio comma | 6.0 | 37.5 |
| **Gram-Positive Organisms** | | |
| Actinomyces bovis | 3.75 | |
| Clostridium butyricum | 8.34 | |
| Clostridium septicum | >105 | |
| Clostridium sordelli | >105 | |
| Clostridium tetani | >104 | |
| Clostridium welchi | >104 | |
| Corynebacterium diphtheriae | 0.375 | 3.75 |
| Diplococcus pneumoniae | 8.0 | |
| M. tuberculosis, var. hominis | 0.15 | |
| Staphylococcus aureus § | 0.5 | >16.0 |
| Streptococcus fecalis | 50.0 | |
| Strept. hemolyticus | 2.0 | >16.0 |
| Strept. lactis | 4.0 | |
| Strept. salivarius | 5.0 | 25.0 |
| Strept. viridans | >16 | 120 |

* Micrograms of streptomycin per cubic centimeter of suitable medium required to inhibit growth.

† Some colon bacilli have been reported to require 500 to 50,000 micrograms per cubic centimeter to inhibit growth.

‡ Of a group of Ps. aeruginosa and Ps. fluorescens (by Hirshfeld) some required over 256 micrograms per cubic centimeter to inhibit growth.

§ Some staphylococci have been reported (by Hirshfeld) to require over 256 micrograms per cubic centimeter to inhibit growth.

suggested that improper dosage schedules in some patients might lead to undesirable results. It should be pointed out that, when large doses of streptomycin were used in the experimental animals, all the infected animals could be protected. This serves to stress the importance of maximal effective doses for different infections.

So far, this stimulating effect on the growth of organisms in man has not been observed, in that no increase in the severity of an infection has been observed while it was under treatment. Some observations discussed under "Causes of Streptomycin Failures" may have a bearing on this problem and on dosage. That is to say, the bacteriologic flora may change during treatment

18. Bishop, C. A., and Rasmussen, R. F.: Klebsiella Pneumonia Treated with Streptomycin, J. A. M. A. **131:** 821-822 (July 6) 1946. Durant, T. M.; Sokalchuk, A. J.; Morris, C. M., and Brown, C. L.: Streptomycin Therapy in Hemophilus Influenzae Pulmonary Infections, ibid. **131:** 194-196 (May 18) 1946.

19. This table was taken in large part from Waksman, S. A., and Schatz, Albert: Streptomycin—Origin, Nature and Properties, J. Am. Pharm. A. (Scient. ed.) **34:** 273 (Nov.) 1945.

20. Welch, H.; Price, C. W., and Randall, W. A.: Increase in Fatality Rate of E. Typhosa for White Mice by Streptomycin, J. Am. Pharm. A. **35:** 155 (May) 1946.

so that streptomycin insensitive organisms may appear or increase in numbers if they have been present previous to treatment, and they may invade tissues. This observation stresses the fact that careful bacteriologic examinations in all patients before and during treatment should be carried out.

TABLE 10.—*Suggested Dosage Schedules*

| Condition | Suggested Daily Dose, Gm. | Total Days of Treatment | Average Total Dose, Gm. |
|---|---|---|---|
| Urinary tract infections | 1.0 - 3.0 | 5 - 10 | 5.0 - 30.0 |
| Tularemia | 0.5 - 1.0 | 5 - 7 | 3.0 - 7.0 |
| Gram-negative bacteremias | 2.0 - 4.0 | 5 - 10 | 10.0 - 40.0 |
| Hemophilus influenzae meningitis | 0.5 - 1.0 I.M.<br>0.025- 0.05 I.T. | 5 - 7<br>7 - 8 | 3.0 - 7.0<br>0.35 |
| Typhoid | 3.0 - 5.0 | 10 - 14 | 30.0 - 70.0 |
| Undulant fever | 4.0 - 5.0 | 10 - 14 | 40.0 - 70.0 |
| Peritonitis | 2.0 - 4.0 | 5 - 10 | 10.0 - 40.0 |
| Salmonella infections | 3.0 - 5.0 | 10 - 14 | 30.0 - 70.0 |
| Cholangitis | 2.0 - 4.0 | 5 - 10 | 10.0 - 40.0 |

### CONCENTRATIONS OF STREPTOMYCIN IN THE BLOOD FOLLOWING INTRAMUSCULAR INJECTION

Owing to the fact that the technic for the assay of streptomycin in the blood has varied from one observer to another and that different micro-organisms have been used in the tests, it is difficult to make any accurate predictions in a given case concerning the concentrations of streptomycin in the blood to be expected following the injection of varying amounts of streptomycin parenterally.

Many studies of absorption, blood levels and excretion [4] have been made. In general it can be said that when 0.1 Gm. is given intramuscularly every three hours one can expect that the mean concentration in the blood over a three hour period will be 2-3 micrograms per cubic centimeter, when 0.2 Gm. is given at the same time interval the mean concentration will be 5-6 micrograms per cubic centimeter (minimum 3, maximum 10), for 0.3 Gm. 6-8 micrograms per cubic centimeter (minimum 4, maximum 12) and for 0.5 Gm. 9-10 micrograms per cubic centimeter (minimum 6, maximum 20). When 0.6 Gm. is given intravenously in a single injection the mean concentration will be 12-16 micrograms per cubic centimeter (minimum 10, maximum 26).

It should be recalled that in the presence of whole blood or blood plasma it requires four to eight times as much streptomycin to inhibit the micro-organism as it does when the sensitivity is determined in blood free mediums. It is well, when possible, to maintain a concentration of streptomycin in the blood that is at least that much more than is necessary to inhibit the growth of the organism in vitro in a blood free medium.

As streptomycin is excreted in the urine in a concentrated form, very high concentrations can be obtained there. Zintel, Wylie, Nichols, Flippin and Rhoads [4] have demonstrated that, following a single intravenous injection of 600 mg. of streptomycin into the blood, concentrations in the urine may reach between 16 and 520 micrograms per cubic centimeter over a twelve hour period. In this way it is often possible to sterilize the urine when organisms of high resistance are present.

It is plain, then, that dosage should be guided by the sensitivity of the organism, and when possible an adequate concentration of streptomycin should be maintained in the blood and tissues to inhibit the growth of organisms. In this way the resistance to streptomycin may be reduced to a minimum.

In summing up dosage schedules it should be said that the optimum dosage is that amount which will bring the infection under control and assist in the sterilization of the focus of infection. The amount will depend on the sensitivity of the infecting organism, the site of the lesion and the response of the infection to treatment. Suggested dosage schedules for serious conditions have been summarized in table 10.

### STUDIES OF ACUTE AND CHRONIC TOXICITY

In the 1,000 cases covered in this survey the overall incidence of untoward side effects was 20.5 per cent. It was plain that the incidence of the reactions increased with the total daily dose. When the average daily dose was over 1 Gm. there was a striking increase in the number of reactions. Among patients receiving 3 Gm. a day 46 per cent had reactions, and when the daily dose was 4 Gm. or more, 60 per cent had reactions. They are listed in table 11. The commonest reactions in order of frequency were headache, fever, skin eruptions, flushing of the skin and vertigo, alone or in various combinations. The day of appearance of the various reactions and their duration are shown in table 12.

### ACUTE TOXICITY

For purposes of convenience and discussion the acute cases may be divided into several groups depending on the type of reaction:

*Local Reactions at Site of Injection*

Pain, soreness and induration at the site of local injection of streptomycin into the muscles is frequent. It is often accompanied by signs of local inflammation, with an elevation of the temperature of the skin and redness. These reactions vary with the technic of injection, the volume of material injected and the preparation. The pain may be reduced in some cases by the injection of procaine hydrochloride with the streptomycin. There is no evidence that procaine inactivates streptomycin. Some patients, however, have complained of paresthesias extending for some distance beyond the site of injection. These disappeared when procaine was discontinued.

TABLE 11.—*Data on Reactions*

| | |
|---|---|
| Local reactions: | |
| Local irritation | 15 |
| Tingling | 2 |
| Paresthesias | 3 |
| Histamine-like effects: | |
| Headache | 55 |
| Flushing of skin | 43 |
| Nausea and vomiting | 1 |
| Fall in blood pressure | 1 |
| Sensitization reactions: | |
| Skin eruptions | 49 |
| Fever | 49 |
| Pyrogenic reactions: | |
| Fever | 49 |
| Neurologic disturbances: | |
| Vertigo | 33 |
| Tinnitus | 13 |
| Deafness | 6 |
| Miscellaneous: | |
| Diarrhea | 1 |
| Albuminuria and casts | 2 |
| Purpura hemorrhagica | 1 |
| Arthralgias | 1 |

*Histamine-like Effects*

From table 11 it can be seen that histamine-like effects such as headache, flushing of the skin, nausea and vomiting were seen in some patients. Some of the early preparations of streptomycin contained small

amounts of histamine or histamine-like substances. At present no sample of streptomycin is passed by the producers or the Food and Drug Administration unless when injected intravenously into cats on the basis of 300 micrograms per kilogram it causes no greater fall in blood pressure than the equivalent of 0.1 microgram per kilogram of histamine base.

Nevertheless a certain number of patients react to injections of streptomycin with symptoms and signs suggesting the presence of histamine-like substances in the preparation. They may be transitory, but they occur frequently enough to make the symptoms very disagreeable.

*Sensitization Reactions*

Sensitization reactions are characterized by skin eruptions and fever. There is nothing specific about the type of skin rash, since it may be erythematous, urticarial, maculopapular or even hemorrhagic. Most of the rashes appear from the third to the tenth day of treatment, but they may be observed as early as the second day and even appear after treatment has been stopped. They may last only one day but in some cases have persisted for seven to nine days. The skin eruptions may or may not be accompanied by fever.

When patients have had a skin eruption they frequently react to a single injection of streptomycin with a reappearance of the rash or fever. The longer the interval of time between the initial reaction and the reinjection of streptomycin, the less likely one is to observe a second reaction. In most instances it is well to stop the streptomycin if a skin eruption appears; certainly the dose should be reduced, and if treatment is continued it should be done with care and caution.

*Neurologic Disturbances*

The most frequent and disturbing neurologic disturbance is vertigo. In patients receiving treatment for five to fourteen days there were 33 who complained of it. This symptom is most noticeable in ambulatory patients, but it is also complained of by those confined to bed. The time of appearance and duration of vertigo are shown in table 13.

Tinnitus was reported in 13 cases and deafness in 6. The deafness was usually present in patients with typhoid and was due to the disease and not to streptomycin. More will be said about tinnitus and vertigo in the following section dealing with chronic toxicity.

CHRONIC TOXICITY

Studies of chronic toxicity of streptomycin in man have been carried out by Hinshaw and McDermott. Hinshaw has used the preparations of streptomycin which were available for clinical investigation and which contained at least 50 per cent inert material. McDermott has used crystalline streptomycin sulfate in as pure a form as can be produced at present and he has given 3 Gm. daily for a period of three months. The results of Hinshaw, as reported to the Committee on Chemotherapeutics and Other Agents at a meeting on June 13, 1946, can be summed up as follows:

He stated that he had been studying the effects of streptomycin for about one and a half years. Some patients had been under intermittent treatment for almost a year. In that time 6 patients had died and autopsies had been performed. Only 1 of them showed evidence of renal damage. As streptomycin was used in combination with sulfonamides in this case, it was impossible to say whether streptomycin or the sulfonamide was responsible for the lesion.

The most troublesome symptom in patients receiving prolonged streptomycin treatment was vertigo. There was some interference with vestibular function in all patients receiving large doses of streptomycin over a long period of time. Many of the patients did not complain of vertigo, but, when caloric stimulation of the vestibular apparatus was tested before and during treatment, hypoactive reflexes were found in the vast majority of patients.

In the opinion of Hinshaw, it is possible that vertigo will prove to be a permanent impairment of function, since there seems to be very little evidence of a return to normal function. It should be pointed out, however, that the vertigo decreases to the point of disappearance, and it is thought that this is due to the development of a compensatory mechanism by which patients maintain balance by means of visual, joint and muscle sense. Many of the patients have overcome subjective symptoms in spite of continued treatment.

Diplopia has been observed by Hinshaw, especially with a quick change in position.

Deafness has been observed in several patients with tuberculous meningitis and in typhoid, but in all cases it is attributed to the primary disease process and not to the streptomycin.

TABLE 12.—*Occurrence Times and Duration of Reactions*

| | Cases | Day of Appearance: During Treatment 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | After Treatment 1 | 2 | 3 | 8 | Not Specified | Duration: Days 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 14 | 30 | Not Specified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Headache | 55 | 16 | 9 | 10 | 4 | 2 | 3 | 2 | 1 | 1 | 3 | .. | .. | .. | .. | 4 | 37 | 4 | 4 | .. | 1 | .. | 2 | .. | .. | .. | 1 | 1 | 5 |
| Skin eruptions | 49 | .. | 3 | 3 | 6 | 8 | 2 | 5 | 2 | 1 | 4 | 1 | 2 | 1 | .. | 11 | 8 | 3 | 2 | 1 | 2 | .. | 1 | .. | 1 | .. | .. | .. | 31 |
| Fever | 49 | 7 | 7 | 4 | 7 | 1 | 5 | 3 | 1 | 2 | 3 | .. | .. | .. | .. | 9 | 13 | 7 | 6 | 1 | 1 | 1 | 2 | .. | .. | 1 | .. | 1 | 16 |
| Flush | 43 | 14 | 7 | 3 | 4 | 3 | 4 | 1 | 1 | .. | .. | .. | .. | .. | .. | 6 | 17 | 3 | 3 | 1 | 4 | 1 | 1 | 2 | .. | .. | .. | .. | 11 |
| Tinnitus | 13 | 2 | 1 | 4 | 2 | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 1 | 9 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 |
| Deafness | 6 | 1 | .. | 1 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 3 |

TABLE 13.—*Occurrence Times and Duration of Vertigo (33 Cases)*

| | Times of Appearance: Day of treatment 1 | 2 | 3 | 4 | 5 | 7 | 8 | 10 | 14 | 21 | After Treatment: 3 Days | 6 Days | 1 Month | Not Specified |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. of cases | 7 | 3 | 1 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 |

| | Duration: Days 1 | 2 | 3 | 4 | 5 | 7 | 2 Weeks | 3 Weeks | 2 Months | Not Specified |
|---|---|---|---|---|---|---|---|---|---|---|
| No. of cases | 7 | 4 | 1 | 1 | 2 | 1 | 3 | 1 | 1 | 12 |

Tinnitus was observed in 13 of the patients studied. It appeared between the first and the tenth day and lasted for one to fourteen days. Hinshaw states that this symptom is accompanied by a measurable degree of low tone loss. Tinnitus is a warning signal to decrease dosage.

McDermott has used crystalline streptomycin sulfate in as pure a form as can be produced at present, and he has given 3 gm. daily for a period of three months. The results of the study by McDermott as reported to the Committee can be summed up as follows:

Local irritation at the site of injection was not a serious problem, since repeated injections of 0.375 Gm. of streptomycin caused only minimal discomfort and in no case has it been necessary to discontinue the drug on account of local reactions.

In 9 of 10 patients receiving treatment, many hyaline and granular casts appeared in the urine. This was striking when the urine was acid in reaction. There was no other evidence of impairment of renal function in these patients as determined by weekly renal function tests (urea clearance, blood urea nitrogen and concentration-dilution tests).

### HYPERSENSITIVE REACTIONS

These reactions have been characterized by skin eruptions, fever and eosinophilia.

*Skin Eruptions and Fever*

Skin eruptions appeared in 4 patients between the seventh and eighth days, and in 1 of these it was accompanied by fever. The theory that these skin eruptions and fever were due to hypersensitivity to streptomycin gains support from the reactions following a single injection of streptomycin some days after the initial reaction. In the first case, twenty days after the last injection of streptomycin (thirty-six days after the first injection) the patient received a single injection of 0.0375 Gm. intramuscularly, and a slight elevation of fever was noted. On the following day the same amount was injected and was followed by a skin eruption over the areas of previous involvement. Coincidentally with the appearance of the rash, the eosinophil percentage increased from 2 to 10. The rash disappeared promptly, but the eosinophilia persisted.

In the second patient a reinjection of 0.375 Gm. was given on the thirty-second day of the experiment. This was followed within thirty-six hours by the reappearance of a rash. Three days later a single injection was given without a reappearance of the eruption. It was possible to continue the injections without a recurrence of a rash but with a persistent eosinophilia.

*Eosinophilia*

Nine of 11 patients developed eosinophilia of 5 per cent or higher, and in 8 it persisted as long as the drug was given. In 4 the eosinophilia appeared in association with a skin eruption. In the remaining 5 it appeared during the second month of therapy and was not accompanied by a skin eruption. None of the patients have complained of arthritis or myositis. There was no constant correlation between the onset of eosinophilia and the onset of vertigo, but the two phenomena coexisted. In the 2 patients with skin eruptions the eosinophilia increased to 10 and 13 per cent respectively.

*Neurologic Disturbances*

The neurologic disturbances observed following streptomycin have been vertigo, tinnitus, deafness and paresthesia about the face and extremities. Of these the commonest is vertigo. In the cases reported, in which the average duration of treatment was between five and fourteen days, vertigo occurred in 33 patients; it appeared oftenest during the first five days of treatment and lasted from one day to two months. In 9 of 10 patients receiving 3 Gm. daily of crystalline streptomycin hydrochloride, as reported by McDermott, vertigo appeared between the seventeenth and the twenty-seventh day In only 1 case was the vertigo associated with tinnitus, and this persisted for only one day. When the vertigo became most intense, the subjects complained of mild nausea and occasionally omitted one or two meals. In McDermott's cases the vertigo persisted for seven to ten days and then disappeared almost entirely. A sudden change of position in bed often brought on transitory vertigo. The dizziness might be intensified in some patients after they had been free of it for several days.

Judging from the studies of streptomycin so far concluded, it can be said that both the commercial product and the crystalline streptomycin as produced at present will cause untoward reactions in a certain number of patients. The frequency of reactions increases with the size of the dose and with the duration of the treatment. The three most frequent types of reactions are histamine-like reactions, hypersensitive reactions and neurologic disturbances. While it is likely that the histamine-like reactions are due to impurities in the commerical product, it is difficult to believe that the other two types of reactions are due to impurities, since they occur with crystalline streptomycin as well as with the commercial product. To be sure, it is possible that these reactions are due to small amounts of impurities, but all the available evidence suggests that the active substance is at fault.

Before any patient is started on streptomycin, and especially if prolonged treatment is planned, he should be informed that skin eruptions or vertigo may occur.

### CAUSES OF STREPTOMYCIN FAILURES

The following conditions account for failures of streptomycin:

1. Treatment of infections that are not susceptible to the action of streptomycin; that is, the organism is so resistant that a concentration of streptomycin adequate to inhibit the growth of the organism cannot be maintained in the blood and tissues.
2. Inadequate dosage.
3. Development of resistance to streptomycin in vivo.
4. Change in the species of infecting organism during treatment.
5. Localization of infection in an area that cannot be reached by streptomycin.

The first and second causes of failure can often be discovered by isolating the infecting organism and testing it for its sensitivity, and by using this information as a guide in dosage and treatment.

The third cause, the development of bacterial resistance in vivo, is also detected by a study of the bacteria causing infection.

The fourth cause, a change in the species of infecting organism to one that is resistant to streptomycin, is also important. It can be determined only by careful bacteriologic studies. For example, Weinstein[6] has described the occurrence of Staphylococcus aureus infec-

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tions during the course of treatment with influenza bacillus meningitis, and we have observed a change in the bacterial flora in the sputum, urine and blood following streptomycin treatment. In brief, the sensitive or susceptible organisms are eliminated or decreased in numbers, and nonsensitive organisms grow and multiply and invade tissues.

There are undoubtedly other causes for streptomycin failures, but the ones mentioned are those that are prominent in this study.

### SUMMARY AND CONCLUSIONS

Streptomycin is a potent antibacterial agent that can be given intramuscularly or subcutaneously or injected directly into the subarachnoid space or the pleural or peritoneal cavity. Very little is absorbed from the gastrointestinal tract. The intramuscular route is the one of choice.

Following intramuscular injection, streptomycin is excreted in the urine and bile. It is necessary to maintain a concentration of the drug in the blood and tissues that is at least four to eight times that required to inhibit the organisms in vitro. It is necessary to repeat the injections every three to four hours.

The dosage of streptomycin depends on the type of infecting organism. It is desirable to deliver and maintain a sufficient amount of streptomycin at the site of the lesion so that the concentration is four to eight times that necessary to kill the organisms in vitro. One to 4 Gm. a day for five to fourteen days may be required in certain acute infections.

In the treatment of empyema or meningitis it is advisable to use streptomycin topically by injecting it directly into the pleural cavity or the subarachnoid space.

Streptomycin has been most effective in the treatment of tularemia, Hemophilus influenzae infections, urinary tract infections due to gram-negative bacilli, bacteremias and meningitis due to gram-negative bacilli.

The results in typhoid, brucellosis and Salmonella infections have been disappointing and inconclusive.

The results in experimental and clinical peritonitis are sufficiently impressive to warrant a much more extensive clinical study. The same can be said for pulmonary infections due to Friedländer's bacillus and other gram-negative bacilli.

Further studies in tuberculosis are urgently needed as soon as adequate supplies become available.

Untoward reactions are not infrequent and increase in frequency with increasing dosage. They consist of histamine-like reactions, headache, flushing of the skin, neurologic disturbances, vertigo and paresthesias, hypersensitive reactions, fever, skin eruptions and eosinophilia.

**The Role of Hunches in Science.**—In the lives of scientists there are numerous instances of the value of hunches. Helmholtz, the great German physicist and physiologist, when near the end of his life told of the way in which the most important of his ideas had occurred to him. After investigating a problem "in all directions," he testified, "happy ideas come unexpectedly without effort like an inspiration. So far as I am concerned, they have never come to me when my mind was fatigued or when I was at my working table." Rest was necessary for the appearance of the original ideas, and they occurred as a rule in the morning after a night's sleep.—Cannon, Walter B.: The Way of an Investigator, New York, W. W. Norton & Co., Inc., 1945.

## Clinical Notes, Suggestions and New Instruments

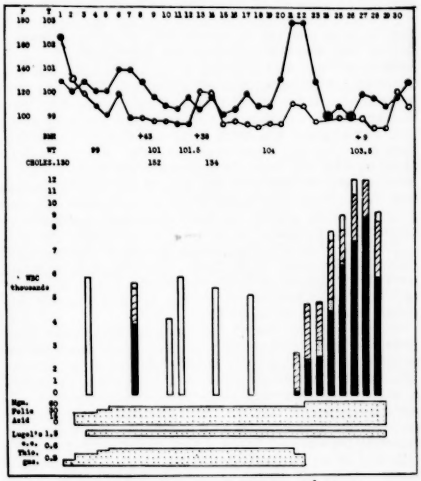
### AGRANULOCYTOSIS FROM THIOURACIL

#### Occurring During Prophylactic Treatment with Folic Acid

ELLIOT V. NEWMAN, M.D., and BENJAMIN F. JONES, M.D.
Baltimore

Agranulocytosis has proved to be the most serious toxic effect of thiouracil in the treatment of hyperthyroidism.[1] The corrective and preventive action of a factor present in liver extracts against granulocytopenia and leukopenia in animals produced by the administration of sulfonamides, thiourea or thiouracil has been reported.[2] Sebrell and Daft have identified the corrective factor as folic acid, using crystalline folic acid preparations in their experiments.

Since crystalline folic acid became available in adequate quantities in November 1945, a number of patients receiving thiouracil treatment in the wards or in the Thyroid Clinic




Course in hospital.

of the Johns Hopkins Hospital have been given relatively large quantities of a crystalline folic acid (lot no. 7-5843 Lederle) as a prophylactic measure.[3] In addition, several patients who had developed leukopenia, neutropenia or agranulocytosis while taking thiouracil without folic acid were given large amounts of folic acid as a therapeutic measure. Van Winkle and his associates [4] in commenting on the treatment of agranulocytosis resulting from thiouracil state that "there is no satisfactory evidence that pantothenic acid, pyridoxine, folic acid, vitamins or pentnucleotide influence the outcome of this disease or aid in preventing such reactions." Agranulocytosis

From the Medical Clinic, Johns Hopkins University School of Medicine and Hospital.

1. Moore, F. D.: Toxic Manifestations of Thiouracil Therapy, J. A. M. A. **130:** 315-319 (Feb. 9) 1946. Van Winkle and others.[4]
2. Spicer, S. S.; Daft, F. S.; Sebrell, W. H., and Ashburn, L. L.: Prevention and Treatment of Agranulocytosis and Leukopenia in Rats Given Sulfanilylguanidine or Succinylsulfathiazole in Purified Diets, Pub. Health Rep. **57:** 1559-1566, 1942. Goldsmith, E. D.; Gordon, A. S.; Finkelstein, G., and Charipper, H. A.: A Suggested Therapy for the Prevention of Granulocytopenia Induced by Thiourea, J. A. M. A. **125:** 847 (July 22) 1944. Daft and Sebrell.[5] Wagley.[6]
3. Folic acid and thiouracil (Deracil) were supplied by Dr. Stanton Hardy, Lederle Laboratories, Pearl River, N. Y.
4. Van Winkle, Walton, Jr.; Hardy, S. M.; Hazel, G. R.; Hines, D. C.; Newcomer, H. S.; Sharp, E. A., and Sisk, W. N.: The Clinical Toxicity of Thiouracil, J. A. M. A. **130:** 343-347 (Feb. 9) 1946.

developed in the case reported here during treatment with thiouracil in spite of very large prophylactic doses of a crystalline folic acid. It appears to be the first clearcut instance of failure of crystalline folic acid to prevent the development of human agranulocytosis.

REPORT OF CASE

*History.*—M. H., a white woman aged 35, a housewife, admitted to the hospital on March 20, 1946, complained of nausea, vomiting, malaise and nasal congestion. She had been seen in this hospital in 1937 for control of diabetes now of nine years' duration. She had been treated for diabetic coma in 1944 and 1945 at other hospitals. Her diabetes was never well controlled, owing to inability of the patient to adjust socially and psychologically. She took insulin irregularly. Polyuria, polyphagia and inability to gain weight were constant.

For about two years she had noticed nervousness and emotional instability. In the summer of 1945 palpitation and some ankle edema occurred. Six months before admission she noticed swelling in the neck and an increase in nervousness and fatigue with onset of puffiness of the upper eyelids. In the last two months her menses changed from regularity to intervals of three to six weeks and were less abundant.

*Physical Examination.*—On admission her temperature was 98.6 F., pulse rate 160, respiratory rate 32 and blood pressure 160/60. She was thin and overactive, and her breath had the odor of acetone. Her skin was warm and flushed. Her eyes showed moderate puffiness of the upper lids. There was some congestion of the nose and throat. Several upper teeth were missing, with retraction of the gums and slight pyorrhea. The thyroid gland was three times normal size, symmetrical, firm and smooth. There was no bruit. The lungs were clear of rales and normally resonant. The heart showed a forceful, palpable beat with the apex in the anterior axillary line. The sounds were booming with no murmurs. The liver edge was barely palpable on deep inspiration. There was no edema of the extremities.

*Course in Hospital.*—The significant features of the patient's course are illustrated in the chart. The diabetic acidosis was controlled in forty-eight hours with insulin, glucose and fluids, and her insulin requirement steadily fell and remained low except during the period of fever.

On the chart are plotted the maximum temperature (solid dots) and pulse (circles) for each day. Below these are the metabolic rates, weights and serum cholesterol determinations. The leukocyte counts are represented by columns. Whenever a differential count was made the polymorphonuclear cells are recorded by the solid area, the lymphocytes by the hatched area, and the myelocytes, when they occurred from the twenty-second to the twenty-fifth day, by the dotted area. Crystalline folic acid 30 mg. and Lugol's solution 1.5 cc. were given daily orally. Thiouracil 0.6 Gm. a day in divided doses was given until the twentieth day.

On the twentieth day of thiouracil therapy the temperature rose and the patient complained of an aching tender swollen area in the left upper jaw. There was an enlarged gland in the left submaxillary region. The jaw showed a red swollen area around a few fragments of retained root at the site of the extraction of a molar tooth. The leukocyte count showed a total of 2,800 cells, with only 3 per cent polymorphonuclear cells. Thiouracil was discontinued and 100,000 units of penicillin was injected every two hours intramuscularly. The dose of folic acid was increased to 60 mg. daily.

In forty-eight hours the temperature had subsided, infection of the dental root had improved and the leukocyte count had risen. During the recovery from agranulocytosis many juvenile forms and myelocytes appeared in the smear and a moderate leukocytosis occurred.

Penicillin therapy was continued until the time of thyroidectomy on the twenty-ninth hospital day. The patient was in excellent condition for operation in spite of the attack of agranulocytosis. The metabolic rate dropped to +9 per cent before operation. The course of the operation and postoperative period was uneventful and no further difficulties were encountered. It is planned to remove her infected teeth under penicillin therapy. The patient's insulin requirement dropped sharply after operation.

COMMENT

In addition to the case reported here, 2 patients who developed agranulocytosis while under treatment with thiouracil without prophylactic folic acid were treated with very large doses of folic acid. Thiouracil was discontinued in each case as soon as agranulocytosis developed, and the patients were given other types of treatment in addition to crystalline folic acid. Both patients recovered, but the part played by folic acid in their recovery is uncertain. The relatively low incidence of agranulocytosis, granulocytopenia and leukopenia in patients treated with thiouracil [1] indicates the necessity of a careful statistical study of large numbers of cases to evaluate finally the ability of folic acid to prevent these toxic complications in man.

The appearance of agranulocytosis in this case, in spite of the prophylactic administration of large amounts of crystalline folic acid, emphasizes the warnings against reliance on folic acid to prevent the toxic effects of thiouracil on the bone marrow. The essential preventive measures in our experience have been frequent total and differential white blood cell counts and equally frequent clinical scrutiny for symptoms and signs of toxicity, with prompt cessation of thiouracil treatment on their discovery. It is important to watch for local infections, especially in the mouth, and to treat them vigorously on first appearance.

Sebrell and Daft [5] used crystalline folic acid from two different sources and reported that one of these preparations corrected anemia as well as granulocytopenia. The crystalline folic acid used in this study is from a lot which has been successfully used in the treatment of pernicious anemia and the anemia of sprue.[6]

CONCLUSION

Agranulocytosis from thiouracil occurred during prophylactic treatment with large amounts of crystalline folic acid orally. Continued close observation of patients taking thiouracil for symptoms and signs of toxicity and infection is necessary.

## GENERALIZED ANGIONEUROTIC EDEMA DUE TO PENICILLIN INHALATIONS TREATED WITH BENADRYL

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Memphis, Tenn.

There are accumulating cases in the literature of reactions to penicillin. These reactions have been on an allergic basis. They do not occur at once but only after the patient has had time to build up a sensitivity to the drug (or to the impurities in the drug). Obviously the reactions may follow any mode of medication. In this case the mode of administration of the drug was by nebulization into the lungs.

J. D., a white man aged 54, has had chronic bronchitis and vasomotor rhinitis for many years. Upper respiratory infections have always aggravated his bronchitis. Mornings would bring an increase in cough and sputum, so that a diagnosis of bronchiectasis was entertained. X-ray examination of the lungs showed increased bronchial markings, but a bronchogram was not made. The past medical history revealed no attacks of asthma, no angioneurotic edema nor urticaria, no penicillin medication by any route.

The patient was instructed in the use of penicillin by nebulization. He received 25,000 units of penicillin in 0.5 cc. of isotonic solution of sodium chloride four times daily. After ten days (1 million units) the patient developed a severe generalized angioneurotic edema involving the face, hands, scrotum and feet. There was also swelling of the ankles and knees. The volar surface of the thumbs and wrists was ecchymotic. The scalp showed four discrete hard nodules 1 to 1.5 cm. in diameter; these were not tender but had the consistency of cartilage. A patchy rash scattered on the back, abdomen and extremities caused considerable itching.

The patient was given four capsules of benadryl 50 mg. each the first day. He showed a reduction in swelling and pruritus by nightfall. During the next twenty-four hours he received ten capsules of benadryl, as it was felt that since

5. Daft, F. S., and Sebrell, W. H.: The Successful Treatment of Granulocytopenia and Leukopenia in Rats with Crystalline Folic Acid, Pub. Health Rep. **58**: 1542-1545, 1943.
6. Wagley, Phillip F.: Personal communication to the author.

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the allergic manifestation was so evident more frequent doses were indicated. The patient had entirely recovered after taking fourteen capsules. The hard nodules on the scalp had also disappeared without a trace. The only reaction to the benadryl medication noted by the patient was that he felt "dopy." This disappeared on cessation of medication.

SUMMARY

A case of generalized angioneurotic edema with urticaria and arthralgia due to penicillin inhalations was observed.

The patient obtained excellent relief from this condition with benadryl.

741 Madison Avenue.

## Council on Physical Medicine

*The Council on Physical Medicine has authorized publication of the following reports.* HOWARD A. CARTER, *Secretary.*

### PEERLESS EPILATION UNIT ACCEPTABLE

Manufacturer: Peerless Laboratories, 467 Tenth Avenue, New York 18.

The Peerless Epilation Unit is designed for removing surplus hair by high frequency currents. This method of removing surplus hair is not to be confused with the method employing galvanic current.

TECHNIC

This method is not unlike the galvanic current method. It is important that, before inserting the needle into the follicle, no high frequency current flows. After the needle has been inserted the current is turned on with one or two short (about one-half second) presses on the footswitch. The needle is removed after turning off the current. Then the hair should be ready to slide out of the follicle with little or no pull.

Removing hair by the high frequency method requires less time than by the electrolysis method. Many more hair follicles may be destroyed in a given time. The pain accompanying high frequency depilation is of short duration, although its intensity might be greater. The amount of irritation of the skin is about the same with the two methods. With carefully applied technic there is only slight irritation. Scarring is avoidable. When scars occur, it is usually the result of repeated applications of the needle and of the current after failing to remove the hair at the first trial. There is always a certain amount of regrowth following treatment. According to observations over a period of several years, the amount of hair that returns after treatment is about the same as that with the electrolysis method. The outstanding advantage of electrocoagulation for removal of hair is that of saving time.

Peerless Epilation Unit.

The question of removal of hair by high frequency currents has been considered most carefully by dermatologists, and their attitude has been one of extreme caution. It can now be said that removal of unwanted hair by means of electrocoagulation is a safe procedure, provided the operator is skilful and the apparatus suitable.

Experience has shown that most high frequency generators of the spark gap type with a highly damped oscillatory current and with a frequency of about one to three million cycles per second is most suitable, provided a potentiometer is used between the apparatus and the patient for fine adjustment of the current. The exact settings to be employed can be determined once the settings are ascertained. They need not be changed except for unusual situations. Bipolar technic is employed.

APPARATUS

The Peerless Epilation Unit has been examined by the Council on Physical Medicine as to its clinical efficiency and its safety. The instrument is a metal box 6 by 7 by 12 inches approximately and weighs about 5 pounds. It is equipped with regulating devices such as a toggle switch for turning on the current, a footswitch for convenience of the operator and dials to control the potentiometer and the spark gap. The instrument seems to be satisfactory for generating a small amount of damped high frequency current. The circuit is a modified Tesla high-frequency hookup. Electrodes and lead wires are provided.

The Council on Physical Medicine voted to include the Peerless Epilation Unit in its list of accepted devices.

### PARAVOX HEARING AIDS MODELS VH AND VL ACCEPTABLE

Manufacturer, Paraphone Hearing Aid, Inc., 2056 East Fourth Street, Cleveland 15.

Paravox Hearing Aids, Models VH and VL, were submitted to the Council on Physical Medicine for consideration.

The Paravox Model VH Hearing Aid is a single unit instrument with the microphone, three tube amplifier and batteries contained in one case. A light colored plastic cord connects the crystal receiver to the case.

*Dimensions.*—Case, 1 1/16 by 2 3/8 by 5 1/16 inches (2.69 by 6.13 by 12.85 cm.).

Receiver, 1 inch in diameter.

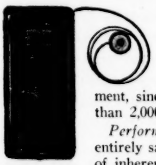
*Weight.*—Case, receiver and cord, 12 ounces (340 Gm.).

*Current Consumption.*—A battery (1½ volts), 60 milliamperes.
B battery (30 volts), 0.85 milliampere.

*Frequency.*—250, 500, 1,000, 2,000, 3,000, 4,000, 5,000 cycles per second.

*Maximum Acoustical Gain.*—37.0, 45.0, 53.5, 57.0, 55.0, 50.0, 32.0 decibels.

*Physical and Mechanical Features.*—The instrument consists of a single metal case of gray lacquered enamel finish. The case contains the batteries. The plastic cord is detachable both at the case and at the receiver. A feature of this instrument is the internal type chassis shell construction, which it is claimed protects the vital parts of the instrument, since the chassis shell can withstand more than 2,000 pounds pressure.



Paravox Hearing Aid

*Performance.*—The instrument operates in an entirely satisfactory manner. There is a minimum of inherent, case and cord noise.

The Paravox Model VL Hearing Aid is a single unit instrument with the microphone, three tube amplifier and batteries contained in one case. A light colored plastic cord connects the crystal receiver to the case.

*Dimensions.*—Case, 1 1/16 by 2 3/8 by 5 1/16 inches (2.69 by 6.13 by 12.85 cm.).

Receiver, 1 inch in diameter.

*Weight.*—Case, receiver and cord, 11¾ ounces (434 Gm.).

*Current Consumption.*—A battery (1½ volts), 60 milliamperes.
B battery (30 volts), 0.75 milliampere.

*Frequency.*—250, 500, 1,000, 2,000, 3,000, 4,000, 5,000 cycles per second.

*Maximum Acoustical Gain.*—25.5, 35.5, 44.0, 43.5, 37.0, 32.0, 9.5 decibels.

*Physical and Mechanical Features.*—The instrument consists of a single metal case of gray lacquered enamel finish. The case contains the batteries in addition to the microphone and amplifier. The plastic cord to the receiver is detachable at either end, at the case or the receiver. A feature of this instrument is the internal type chassis shell construction, which it is claimed protects the vital parts of the instrument, since the chassis shell can withstand more than 2,000 pounds pressure.

*Performance.*—The instrument operates in an entirely satisfactory manner. There is a minimum of inherent, case and cord noise.

Samples of the guaranty, the directions for using the hearing aids and other information were submitted. This evidence is acceptable to the Council.

The Council on Physical Medicine voted to include the Paravox Hearing Aids, Models VH and VL, in its list of accepted devices.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, SEPTEMBER 14, 1946

## EXOPHTHALMOS AND THYROTOXICOSIS

Chronic progressive exophthalmos in thyrotoxicosis is a highly complex phenomenon; its etiology has not been completely elucidated. This exophthalmos may show considerable variation from day to day in its early stages and may disappear after death or under general anesthesia. The degenerative and inflammatory changes in the orbital contents are no doubt the result rather than the cause of the exophthalmos. The etiologic role of extracts of the anterior pituitary lobe in the production of exophthalmos was demonstrated by Schockaert in 1931 and by Loeb and his associates in 1932 working with young guinea pigs. Marine [1] produced exophthalmos and large parenchymatous goiters in puberal rabbits by daily intramuscular injection of methyl cyanide. The exophthalmos was even more easily and quickly produced when the thyroid was previously removed. Smelser [2] found that injection of anterior pituitary extract into guinea pigs for from three to nine weeks resulted in loss of weight and intense stimulation of the thyroid, as indicated by high epithelium and loss of colloid. Of the 26 guinea pigs thus treated, only 3 showed slight indication of exophthalmos. In another series of 26 guinea pigs the thyroid and the left cervical sympathetic ganglion were removed and the same amount of anterior pituitary was injected daily. Definite, and in some instances extreme, exophthalmos developed in all but 3. Necropsy on these guinea pigs showed that the increase in retrobulbar tissue was due to an increase of 100 per cent in the fatty connective tissue, 40 per cent in the dorsal lacrimal gland and 22 per cent in the extraocular muscles. The increase in orbital tissue was as great in the eye from which sympathetic innervation had been removed as in the normal eye. The exophthalmos apparently was not dependent on a functioning sympathetic innervation. These experiments demonstrate that the exophthalmos promoting effect of anterior pituitary is brought about by action on other end organs than the thyroid. Exophthalmos cannot be produced by the administration of thyroxine or desiccated thyroid either in man or in animals. The opposite is true. Thyroxine offers specific protection against development of exophthalmos in rabbits, guinea pigs and probably man. This form of exophthalmos may be cured in rabbits by thyroxine, and there is considerable clinical evidence that thyroxine is beneficial in human exophthalmos.

Clinicians are well acquainted with the phenomenon of paradoxical or malignant exophthalmos which develops either spontaneously or after a thyroidectomy. The etiology of this type of exophthalmos is different from that seen in thyrotoxicosis. Brain [3] advanced the concept of "exophthalmic ophthalmoplegia" as a distinct syndrome. The term is supposed to cover a group of cases in which exophthalmos and loss of eye movement occurred together, sometimes associated with, at others independently of, thyrotoxicosis. This condition may develop spontaneously or after a thyroidectomy. The spontaneous cases are not improved by the operation. The characteristic feature of the syndrome was considered to be a paralysis limited to the eye muscles and not possessing the distinctive fatigability of myasthenia gravis nor showing improvement after the administration of neostigmine. The histologic basis consists mainly in edema of the orbital contents and extensive lymphatic infiltration and fibrosis of the eye muscles. A prolonged study of 31 cases of exophthalmic ophthalmoplegia by Brain showed that this condition differs from exophthalmos of thyrotoxicosis in both age and sex incidence and in the role of the thyroid in its etiology. Thus thyrotoxicosis plays no essential part in the production of exophthalmic ophthalmoplegia. The condition is seen in middle age and the incidence in males is much higher than it is in exophthalmos of thyrotoxicosis. The sympatheticotonia of thyrotoxicosis is slight or absent. Mulvany [4] emphasizes that the exophthalmos of hyperthyroidism may be either thyrotoxic or thyrotropic, but the progressive proptosis of hypothyroidism can be only hypophysial in origin.

The recognition of the type of exophthalmos has a definite bearing on its treatment. An important differential point between the thyrotoxic and the thyrotropic or pituitary variety of exophthalmos is the presence in the latter of an increased intraorbital pressure. Another constant feature is orbital lid and conjunctival edema leading to corneal ulceration and perforation if left unrelieved. The basal metabolic rate bears no relation to proptosis of pituitary type, some cases developing after thyroidectomy. The effect of thyroidectomy is beneficial in thyrotoxicosis, while in the pituitary variety it may result in extreme aggravation

1. Marine, David: Studies on Pathologic Physiology of the Exophthalmos of Graves's Disease, Ann. Int. Med. **12**: 443 (Oct.) 1938.

2. Smelser, G. K.: Experimental Production of Exophthalmos Resembling That Found in Graves's Disease, Proc. Soc. Exper. Biol. & Med. **35**: 128 (Oct.) 1936.

3. Brain, W. R.: Exophthalmic Ophthalmoplegia, Quart. J. Med. **7**: 293 (April) 1938.

4. Mulvany, J. H.: Exophthalmos of Hyperthyroidism: I, Am. J. Ophth. **27**: 589 (June) 1944; II, ibid. **27**: 693 (July) 1944; III, ibid. **27**: 820 (Aug.) 1944.

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of the exophthalmos. The pituitary variety is improved by administration of iodine and of thyroxine.

Mulvany sees no justification for considering exophthalmic ophthalmoplegia as a definite syndrome. He prefers to classify the condition as being either thyrotoxic ophthalmoplegia or thyrotropic or pituitary ophthalmoplegia. Ida Mann,[5] on the basis of 18 clinical cases of exophthalmic ophthalmoplegia, describes three clinical groups. In group 1 the patients exhibited signs of excess thyroxine manifested by loss of weight, rapid pulse, raised basal metabolic rate, soft moist skin, lid retraction and lid lag. In group 2 were cases in which the anterior lobe pituitary thyrotropic hormone was responsible. These cases were characterized by orbital lid and conjunctival edema and infiltration. They developed proptosis, ophthalmoplegia, fundus changes, lid edema, corneal ulceration and perforation. The third group showed the influence of excess thyroxine and thyrotropic hormone rising simultaneously.

## SITE OF ACTION OF DDT AND ITS TOXICITY

Lewis and his associates [1] of the Wistar Institute, University of Pennsylvania, showed that DDT is nontoxic for tissue cultures. Normal growth took place with cells of the heart, liver, kidney, stomach, intestine, skeletal muscle, brain and spinal cord of chick embryos or of 1 day rats, even in the presence of a saturated solution of DDT. The conclusion seemed evident that the site of action of DDT must be somewhere in the complex integration of the intact animal. This was in line with a previous report by Yeager and Munson [2] of the U. S. Department of Agriculture, who made a pharmacologic analysis of the action of DDT when injected into the roach (Periplaneta americana).

In the intact roach the symptoms of DDT toxicity are increased activity with the appearance and persistence of contractions and tremors in the appendages, erratic behavior and loss of equilibrium. In a typical experiment, DDT solution was injected into an isolated leg taken from a normal roach or into a leg attached to a roach whose entire heart region had been cauterized to prevent cardiac circulation. Such injections produced typical contractions and tremors in the leg. Severance of the leg from the cauterized roach did not stop the symptoms. Sectioning of the leg distal to the injected region immediately stopped all symptoms in the distal portion.

From these and other experiments Yeager concluded that the primary site of reaction of DDT is the region of the peripheral motor nerve lying between its origin in the ventral nerve cord and its terminations in motor end plates. That the motor end plates are also involved is suggested by histologic evidence subsequently reported by Carey and his associates [3] of the Department of Anatomy, Marquette University.

Following intraperitoneal injection of a lethal dose of DDT into rats, there is usually an intense salivation and involuntary passage of feces and urine, with clonic involuntary contractions and tremors of the voluntary muscles, death usually occurring within seventy-two hours. Even more intense reactions were noted in chameleons, death usually occurring within six to twenty-four hours. When chameleons in the terminal stages of this reaction are skinned, there is a continuation of intermittent and incoordinate muscle action resembling both fibrillation and fasciculation of denervated muscles. This persists for ten to twenty minutes after excision of the muscle.

The major microscopic changes in the motor innervation of the gastrocnemius muscle of both rats and chameleons are (*a*) progressive depletion of epilemmal axons of auriphilic (gold chloride staining) substance and demyelinization of peripheral neurons, (*b*) centrifugal discharge from the motor end plates of auriphilic substance into the myoplasm, either as elongated streamers, serial beads or large elongated masses, (*c*) eventual disappearance of the motor end plates and (*d*) acute atrophy of many muscle fibers.

Carey believes that these degenerative changes account for the neuromuscular symptoms of severe DDT intoxication. Other toxic reactions, however, presumably contribute to its ultimate lethal effects.

## INANITION IMMUNITY

In 1944 Stoerk and his associates [1] of the Department of Pathology, Columbia University, showed that in rats partial pyridoxine (vitamin $B_6$) deficiency produces atrophy of the thymus and other lymphoid tissue without a parallel reduction in body weight. Daugherty and his associates [2] of Yale subsequently confirmed an earlier belief that lymphocytes are the main source of specific antibodies. If so, a diet deficient in pyridoxine should lead to reduced specific antibody formation.

Stoerk [3] divided young albino rats into three groups of litter mates. The animals of group 1 were weaned on a diet deficient in pyridoxine but otherwise adequate. Restricted amounts of the complete diet were fed to the rats in group 2 in order to duplicate the growth retardation in group 1. A second control group received the complete diet ad libitum. During the first five weeks on these diets the rats in group 3, the adequately fed control group, increased in body weight from an average of 46.9 Gm. to 160 Gm. The two restricted

5. Mann, Ida: Exophthalmic Ophthalmoplegia and Its Relation to Thyrotoxicosis, Laryngoscope **29**: 654 (June) 1946.

1. Lewis, W. H., and Richards, A. G., Jr.: Science **102**: 330 (Sept. 28) 1945.

2. Yeager, J. F., and Munson, S. C.: Science **102**: 305 (Sept. 21) 1945.

3. Carey, E. J.; Downer, E. M.; Toomey, F. B., and Haushalter, E.: Proc. Soc. Exper. Biol. & Med. **62**: 76 (May) 1946.

1. Stoerk, H. C., and Zucker, T. F.: Proc. Soc. Exper. Biol. & Med. **56**: 151 (June) 1944; **62**: 90, 1946.

2. Daugherty, J. F.; Chase, Jeanne H., and White, A.: Proc. Soc. Exper. Biol. & Med. **57**: 295 (Nov.) 1944.

3. Stoerk, H. C., and Eisen, H. N.: Proc. Soc. Exper. Biol. & Med. **62**: 88 (May) 1946.

groups increased but half that rate. In the pyridoxine deficient group the average terminal thymus weight was 0.047 Gm. In the two control groups the average was 0.288 Gm., or six times as much. At the end of five weeks all three groups were immunized against washed sheep erythrocytes. Each animal received three intraperitoneal injections of 0.5 cc. of 5 per cent washed red blood cells. Five days after the last injection the animals were exsanguinated. The resulting serums were titrated individually for hemagglutinins and hemolysins. Of the 9 pyridoxine deficient rats, 6 showed no measurable agglutinins or hemolysins. The other 3 had low titers. The average composite (hemagglutinin and hemolysin) titer of these 9 rats was 1:7. Of the 16 animals of the two control groups, 13 had comparatively high titers (e. g. 1:320). The average composite titer for the two groups was 1:150. This is twenty times the average titer of the pyridoxine deficient group. A 95 per cent reduction in specific antibody formation is thus produced by vitamin $B_6$ deficiency.

Of even greater clinical interest is the contrast between the two control groups. In group 3, fed the complete diet ad libitum, the average composite antibody titer was 1:52. In group 2, fed restricted amounts of the same well balanced diet, the average composite titer was 1:238. There was thus a fivefold increase in specific antibody formation associated with decreased caloric intake. More detailed studies of this form of inanition immunity are now in progress.

## Current Comment

### TWENTY-FIFTH ANNIVERSARY OF THE DISCOVERY OF INSULIN

Twenty-five years ago Banting and Best, working at the University of Toronto, isolated the substance of the pancreas that had the faculty of lowering the blood sugar and enabling a depancreatized dog to survive for an indefinite period. They made their first report before the University of Toronto Physiological Journal Club November 14, 1921 at 4 o'clock in room 17. The speakers were Dr. Banting and Mr. Best, and the subject was "Pancreatic Diabetes." The first two papers [1] reporting the results of their work were published in February and May 1922. A commemorative meeting to celebrate the twenty-fifth anniversary of the discovery of insulin is being held under the joint auspices of the University of Toronto and the American Diabetes Association from the 16th to the 18th of this month. Many physicians can recall the pathetic state of children with diabetes in the preinsulin period; their life expectancy was two to three years. Who has forgotten patients completely invalided from severe diabetes who were kept alive to die from starvation? Diabetic coma almost invariably meant death. Surgery in diabetes was a terrible hazard. Today patients with juvenile diabetes grow into adulthood as "normal" people. Pregnancy in the diabetic is no longer prohibited. Life expectancy of the diabetic now approaches 70 years of age. Diabetic patients can now purchase insurance which heretofore was completely denied them. Before us are still the degenerative processes that are disproportionately high in middle aged and elderly diabetic patients. Complications such as retinopathy, coronary disease in young persons with diabetes, kidney complications and peripheral-vascular disturbances are still a menace. With the newer studies of intermediary carbohydrate metabolism, isotopes and alloxan diabetic patients may expect even greater advances in the next twenty-five years than they have had in the past quarter century.

1. Banting, F. G., and Best, C. H.: The Internal Secretion of the Pancreas, J. Lab. & Clin. Med. **7**: 251 (Feb.) 1922; Pancreatic Extracts, ibid. **7**: 464 (May) 1922.

### GROWTH INHIBITING SUBSTANCES IN UNCOOKED SOY BEANS

Stunted growth of animals fed cold processed (raw) soybean meal has been repeatedly reported by stockmen and poultry raisers.[1] These observers have noted a definite improvement in the nutrient value of the same meal after cooking.[2] A plausible explanation of these results would be the assumption that raw soybeans contain a toxic or growth inhibiting substance readily destroyed by heating. Experimental evidence in support of this theory is reported by Klose and his associates [3] of the United States Department of Agriculture. Litters of albino rats were maintained on a stock diet until they were approximately 40 days of age and 90 Gm. per rat in weight. Each litter was then divided equally as far as possible among experimental groups of 10 rats each. Each group was then placed on a selected test diet. The average daily food consumption and gain in weight were recorded for each group for a period of about thirty-five days. The test diets consisted of 14.6 per cent protein added to a protein free basal nutritional mixture. By the end of thirty-five days the average daily gain per rat on 14.6 per cent commercial casein was 2.93 Gm., or 1.49 Gm. per gram of protein eaten. On 14.6 per cent cooked soybean protein the average gain was 2.05 Gm. per day or 1.13 Gm. per gram of protein eaten. On 14.6 per cent raw soybean protein the average daily gain in weight was but 0.82 Gm., or 0.55 Gm. per gram of protein eaten. These data confirm the previously reported stunting effects of raw soybean protein and the improvement in its nutritional value on heating. Partial isolation of the growth inhibiting substance was effected by repeated extraction of the raw soybean protein with diluted hydrochloric acid ($p_H$ 4.2). One part of this extract reduces the nutritional value of 9 parts of casein or of 9 parts of cooked soybean protein by about 50 per cent. The extract loses its growth inhibiting power on heating to 100 C. for thirty minutes. In

1. Daniels, A. L., and Nichols, H. B.: J. Biol. Chem. **32**: 91, 1917. Hayward, J. W.; Steenbock, H., and Bohstedt, G.: J. Nutrition **11**: 219, **12**: 275, 1936. Hayward, J. W.; Halpin, J. G.; Holmes, C. E.; Bohstedt, G., and Hart, E. B.: Poultry Science **16**: 3, 1937.

2. Johnson, L. M.; Parsons, H. T., and Steenbock, H.: J. Nutrition **18**: 423, 1939.

3. Klose, A. A.; Hill, B., and Fevold, H. L.: Proc. Soc. Exper. Biol. & Med. **62**: 10 (May) 1946.

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1945 Kunitz [4] of the Rockefeller Institute, Princeton, N. J., isolated a crystalline trypsin inhibitor from similar acid extracts of cold processed defatted soybean meal. This isolation suggests that the growth inhibiting effect of raw soybean protein may be in part at least due to the indigestibility of raw soybean proteins due to the presence of this antitrypsin. Whether or not antitryptic prevention of intestinal proteolysis accounts for the full growth inhibiting action of raw soybeans has not yet been determined.

## SULFONAMIDE CHEMOTHERAPY OF INFLUENZA COMBINED WITH BACTERIAL INFECTION

Probably many of the deaths which occurred during the pandemic of influenza in 1918-1919 were due to secondary pneumonia caused by bacteria superimposed on the original infection of the lung with influenza virus. Recently Harford and his colleagues [1] have carried out experiments on rats and mice to determine the effect of sulfonamides given to animals previously inoculated intrabronchially with heavy suspensions of influenza virus A of the PR8 Weiss and Lee strains. The purpose, of course, was to observe the action of sulfonamides on the secondary bacterial component of combined infection with influenza virus and pneumococci. Sulfonamide therapy controlled the bacterial component in both mice and rats. Bacterial pneumonia, they found, could be superimposed on sublethal viral infection in mice by inhalation of fine droplets of bacterial suspensions of pneumococci several days after inoculation of virus. The sulfonamide therapy also controlled such superimposed bacterial pneumonia. Although these studies were carried out on mice and rats and therefore cannot be considered necessarily applicable to man, the authors suggest that sulfonamide chemotherapy will probably prove valuable in the treatment of secondary bacterial pneumonia if another pandemic of influenza occurs. It may also be effective in reducing the case fatality rate if the viral component of the infection is not so severe as to cause death by itself.

## CONTROL OF BUBONIC PLAGUE

An unusual opportunity to study the newer methods of controlling bubonic plague was afforded in 1945. An epidemic of plague started at Tumbes, Peru. This city of about 10,000 population was in a deplorable sanitary state, the climate was propitious for epidemic spread, there was a heavy murine population of Rattus alexandrinus exhibiting high flea indexes and the fleas were nearly all Xenopsylla cheopis. Thus the infectious agent, Pasteurella pestis, which had been imported from an endemic zone of plague, encountered a medium favorable for propagation in an extremely susceptible rat population. The human epidemic was preceded by an epizootic. All cases of human plague were of the bubonic type, 40 cases occurring in all, with a case fatality rate of 35 per cent. The only control measures used were DDT in powder form applied to the floors of all houses (1,357, with 3,820 rooms and 7,388 inhabitants). The purpose of this was to prevent the biting of the populace by infected fleas. A second application was made in the spaces between ceilings and roofs, beneath floors and between double walls. Finally a third application of DDT was made, combined with the raticide sodium fluoroacetate, "1080." The latter was employed in connection with three types of poison baits: 1:1,000 solution in water, a 5:1,000 mixture in rolled oats and a similar concentration in small dried cakes. Both procedures were highly effective. Four days after the first application of DDT was finished the epidemic stopped. The fleas found in rat nests decreased rapidly. The sodium fluoroacetate also brought about excellent results. In one area of the city 40.4 rats per hundred baits were killed, and 1.2 rats per house.[1] As far as can be judged from this single experience, the application of DDT followed by rat poisoning with sodium fluoroacetate promises highly favorable results in the control of epidemics of bubonic plague.

## A MEDICAL CENTER FOR CHILDREN

Unusual among forthcoming developments in the field of medical institutions is the proposal to make the Children's Hospital of Boston the first medical center for children to be developed anywhere in the world. The Children's Hospital of Boston has had seventy-seven years of service to the community. Its board of trustees sees now an opportunity for expanding existing services and for creating new units which will complete the project now contemplated. Among the new divisions to be incorporated in the institution will be a neurologic institute for the care of cases in the fields of neurology, neurosurgery and psychiatry, a new division for adolescents and considerable expansions in the field of infectious diseases. Proposed also is a center in which special attention will be given to cancer. The National Foundation for Infantile Paralysis has aided the project by making the Children's Hospital of Boston a special center for the study and care of cases of poliomyelitis. This section will include graduate teaching in infantile paralysis for physicians, nurses and physical therapists. A child health unit planned for preventive medicine will round out the concept. The Children's Hospital is affiliated with Harvard Medical School and cooperates also with other educational institutions and with other general and specialized hospitals in Boston. Obviously the opportunities for research in an institution of this type will be unexcelled. The development is in accord with recent trends in medical care brought about by the development of new technics in transportation of the sick, so that a medical center of this type is within a few hours of access to populations hundreds of miles removed. The most highly technical and specialized services of medicine and of groups of specialists are thus made easy of access to difficult cases which in a previous era would have had nothing resembling a similar opportunity for scientific diagnosis and treatment.

4. Kunitz, M.: Science **101:** 668, 1945.

1. Harford, Carl G., and others: Sulfonamide Chemotherapy of Combined Infection with Influenza Virus and Bacteria, J. Exper. Med. **83:** 505 (June) 1946.

1. Macchiavello, Atilio: Plague Control with DDT and "1080," Am. J. Pub. Health **36:** 482 (Aug.) 1946.

# ORGANIZATION SECTION

## Washington Letter

*(From a Special Correspondent)*

Sept. 9, 1946.

### Possibility of Compromise on Use of Nevius Tract For Veterans Administration Hospital

A compromise is in sight on use of the Nevius tract, a million square feet of land bounded by Arlington National Cemetery and Arlington Ridge Road, as a site for a Veterans Administration hospital. Executive Officer E. A. Demaray of the National Capital Park and Planning Commission states that the agency had never set a limit of four stories on structures erected on the tract, as suggested by Veterans Administration spokesmen. Dr. Paul R. Hawley, chief medical director of the Veterans Administration, had asked the Federal Board of Hospitalization to withdraw its approval of the tract as a hospital site because at least ten stories would be necessary for the modern 750 bed hospital planned for Washington. He will confer with Major Gen. U. S. Grant III, chairman of the commission, to break the deadlock. "If we have any assurance that we could build a really workable hospital there, we would like to have the Arlington tract" Dr. Hawley said. Veterans Administrator Omar Bradley has informed Representative Sasscer, Democrat of Maryland, that the proposal to erect a veterans' hospital in nearby Prince Georges County would be fully considered.

### Indian Service Hospitals and Sanatoriums Join the American Hospital Association

Commissioner of Indian Affairs William A. Brophy has announced that the sixty-nine Indian Service hospitals and sanatoriums in the United States have become members of the American Hospital Association. The Indian Service is the largest single operator of small hospitals in the country. Through the American Hospital Association it will cooperate with hospitals throughout the United States in exchanging the latest information on administrative, professional and technical hospital developments. Indian Service hospitals, medical attention and general health programs are available to more than 400,000 Indians, Eskimos and Aleuts. Hospitals in the continental United States range in size from 10 to 335 beds and average 50 beds. There are, in additional, seven hospitals and sanatoriums in Alaska and a 200 bed tuberculosis sanatorium to be built in Sitka.

### Tractors Instead of Automobiles for Amputees

Amputee veterans who prefer a tractor to an automobile can get one under the bill signed by the President allocating $1,600 or less for the purchase of vehicles especially fitted with devices. The first car has been delivered under the Congressional appropriation of $30,000,000 to buy cars for veterans who lost one or both legs above the ankle. Incidentally, Harold A. Carlson, who lost both arms and his hearing and is a prosthetic specialist in the Veterans Administration department of surgery, had his specially equipped car stolen just before he was to leave for the West Coast to serve as consultant under the "Autos for Amputees" bill.

### Use of "Human Guinea Pigs" in Pressure Chamber Tests by Nazis

Army Air Forces Headquarters has disclosed after study of captured enemy medical reports that "human guinea pigs" were "successfully" used in German pressure chamber tests up to 30,400 feet without oxygen. The research was carried out in German Laboratories in the Dachau internment camp by Nazi scientists and doctors during April 1942. Tests were made on human subjects at the direction of Heinrich Himmler, Gestapo chief. Records in the Office of the Air Surgeon reveal that tests placed human beings at a higher artificial altitude without oxygen than ever before reached. The U. S. Navy in operation "Mount Everest" raised volunteer personnel to 29,025 feet.

### National Institute of Health Continues Research on Common Cold

Dr. Charles Armstrong, head of the Division of Infectious Diseases of the National Institute of Health, U. S. Public Health Service, reports that the organization is making a formal inquiry into the cause, prevention and treatment of the common cold. Research is under direction of Dr. Norman Topping, who did much original work on rickettsial diseases, such as Rocky Mountain spotted fever. Volunteer human patients will aid in research, as no animals catch cold except chimpanzees, which are difficult to procure.

### Kaiser-Kabat Clinic to Open in Washington October 1

The Kaiser-Kabat Institute for Neuromuscular Rehabilitation will be opened October 1 with Dr. Herman Kabat as director. Purchase of an apartment site and clinic equipment was financed by Henry J. Kaiser, West Coast shipbuilder. His son was treated by Dr. Kabat, who has gained attention by his use of neostigmine. Specialties of the clinic will be spastic paralysis, residual disabilities of infantile paralysis, multiple sclerosis, paralysis resulting from war and industrial injuries, and other paralytic conditions.

## Coming Medical Meetings

Annual Congress on Industrial Health, Boston, Sept. 30-Oct. 2. Dr. Carl M. Peterson, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Ophthalmology and Otolaryngology, Chicago, Oct. 13-18. Dr. W. L. Benedict, 102 Second Ave., Rochester, Minn., Secretary.

American Association on Mental Deficiency, Montreal, Canada, Oct. 2-4. Dr. Neil A. Dayton, Mansfield Depot, Connecticut, Secretary.

American Association of Railway Surgeons, Chicago, Oct. 29-31. Dr. Raymond B. Kepner, 547 West Jackson Blvd., Chicago 6, Secretary.

American Clinical and Climatological Association, Hershey, Pa., Oct. 21-23. Dr. James Bordley III, Johns Hopkins Hospital, Baltimore 5, Secretary.

American Diabetes Association, Toronto, Canada, Sept. 16-18. Dr. Cecil Striker, 630 Vine St., Cincinnati 2, Secretary.

American Hospital Association, Philadelphia, Sept. 30-Oct. 3. Mr. George P. Bugbee, 18 E. Division St., Chicago, Executive Secretary.

American Roentgen Ray Society, Cincinnati, Sept. 17-20. Dr. H. Dabney Kerr, University Hospital, Iowa City, Iowa, Secretary.

Association of American Medical Colleges, New Orleans, Oct. 28-30. Dr. Fred C. Zapffe, 5 South Wabash Ave., Chicago, Secretary.

Association of Military Surgeons of the United States, Detroit, Oct. 9-11. Col. James M. Phalen, Army Medical Museum, Washington 25, D. C., Secretary.

District of Columbia, Medical Society of the, Washington, Sept. 30-Oct. 2. Mr. Theodore Wiprud, 1718 M Street N. W., Washington 6, Secretary.

Indiana State Medical Association, Indianapolis, Oct. 29-31. Mr. Ray E. Smith, 23 East Ohio St., Indianapolis, Secretary.

International College of Surgeons, United States Chapter, Detroit, Oct. 21-23. Dr. Louis J. Gariepy, 16401 Grand River Ave., Detroit 27, Secretary.

Inter-State Postgraduate Medical Association of North America, Cleveland, Oct. 15-18. Dr. Tom B. Throckmorton, 406 Sixth Ave., Des Moines, Iowa, Secretary.

Kentucky State Medical Association, Paducah, Sept. 30-Oct. 3. Dr. P. E. Blackerby, 620 S. Third St., Louisville, Secretary.

Michigan State Medical Society, Detroit, Sept. 25-27. Dr. L. Fernald Foster, 2020 Olds Tower, Lansing 8, Secretary.

Mississippi Valley Medical Society, St. Louis, Sept. 25-27. Dr. Harold Swanberg, 510 Maine St., Quincy, Ill., Secretary.

Nevada State Medical Association, Las Vegas, Oct. 4-5. Dr. Moreton J. Thorpe, 17 N. Virginia St., Reno, Secretary.

North Pacific Pediatric Society, Vancouver, B. C., Oct. 19. Dr. A. B. Johnson, Cobb Bldg., Seattle 1, Secretary.

Omaha Mid-West Clinical Society, Omaha, Oct. 28-Nov. 1. Dr. Roy W. Fouts, 1036 Medical Arts Bldg., Omaha 2, Secretary.

Oregon State Medical Society, Gearhart, Sept. 26-28. Dr. Thomas S. Saunders, 1020 S.W. Taylor St., Portland 5, Secretary.

Pennsylvania, Medical Society of the State of, Philadelphia, Oct. 7-10. Dr. Walter F. Donaldson, 500 Penn Ave., Pittsburgh 22, Secretary.

Southern Medical Association, Miami, Fla., Nov. 4-7. Mr. C. P. Loranz, Empire Bldg., Birmingham 3, Ala., Secretary.

Southern Psychiatric Association, Richmond, Va., Oct. 7-8. Dr. Newdigate M. Owensby, 384 Peachtree St. N.E., Atlanta, Ga., Secretary.

Vermont State Medical Society, Burlington, Oct. 2-4. Dr. Benjamin F. Cook, 128 Merchants Row, Rutland, Secretary.

Virginia, Medical Society of, Virginia Beach, Oct. 14-16. Miss Agnes V. Edwards, 1200 East Clay St., Richmond 19, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Oct. 7-9. Mr. Charles H. Crownhart, 110 E. Main St., Madison 3, Secretary.

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# GOVERNMENT SERVICES

## ARMY

### MEDICAL GRADUATES OFFERED INTERNSHIPS

Major Gen. Norman T. Kirk, the Surgeon General, has announced that there are 83 first lieutenant reserve commissions available for 1947 medical school graduates who desire internships in army hospitals. Along with the commission goes an annual salary of $3,404 if the officer has dependents. If he has no dependents he will receive $2,972 a year. These figures include a rental allowance of $60 monthly when government quarters are not furnished.

The commissions represent a departure from former army practice when interns were classified as civilian employees and received about $1,000 annually while completing their fifth, or clinical, year of study. With some 90,000 patients in army hospitals the world over and prospects of a large peacetime army, the Army Medical Department is seeking young doctors interested in a career in military medicine.

In the event that a man who receives a reserve commission does not elect to remain in the Army following his internship or does not develop to meet requirements for army doctors, his training will not be lost. This internship, the conventional rotating type, is recognized by the Council on Medical Education and Hospitals of the American Medical Association and by state boards of registration. They require the clinical year of training before granting a license to practice.

In notifying deans of accredited medical schools of the plan the Surgeon General asked that they recommend men, not only desirable as interns, but who will ultimately develop as Regular Army medical officers. A professional examination will not be required before the internship is accepted. Applications may be submitted by students through the deans of their schools, from whom application blanks may be obtained. Each applicant must be a United States citizen, a prospective 1947 graduate of a recognized school of medicine approved by the Council on Medical Education and Hospitals, must be not over 30 years of age on July 1, 1947, must have no commitment to accept an internship appointment in any other institution and must meet physical standards for appointment in the Medical Corps, U. S. Army. Physical qualifications are printed in Army Regulation 40-105.

### SECRETARY OF WAR APPOINTS MEDICAL ADVISORY COMMITTEE

The Secretary of War announced in August the appointment of a medical advisory committee to maintain and foster close relations between civilian and army medicine and to enable the Army to receive advice on army medical organization and policies from leaders in civilian medicine. The members of the new committee are Dr. Edward D. Churchill of Boston, professor of surgery at Harvard Medical School and president of the American Surgical Association, chairman; Dr. Elliott Cutler, Moseley professor of surgery at Harvard University; Dr. Michael DeBakey of the Tulane University Medical School; Dr. Eli Ginsberg of Columbia University; Dr. William C. Menninger, director of the Menninger Clinic, Topeka, Kan.; Dr. Hugh J. Morgan, professor of medicine, Vanderbilt University Medical School, and Dr. Maurice C. Pincoffs, professor of medicine, University of Maryland. All members of the committee served with the Medical Department of the Army during the war either as officers or in a civilian capacity.

During the war more than 95 per cent of army doctors were drawn from civilian medicine. Most of these, except recent graduates of the Army Specialized Training Program, have been released from the Army and have returned to their civilian practices. Major Gen. Norman T. Kirk, Surgeon General of the Army, previously announced a policy under which distinguished civilian doctors will serve as consultants in their respective specialties in army general hospitals.

### ARMY AWARDS AND COMMENDATIONS

#### Lieutenant Ernest E. Banfield

The Army Commendation Ribbon was recently awarded to 1st Lieut. Ernest E. Banfield, Portland, Ore. Accompanying the award was a citation which read "For exceptionally meritorious conduct from Jan. 1, 1946 to June 30, 1946 as a ward surgeon on the surgical service and acting chief of the General Surgical Section, Regional Station Hospital, Fort Belvoir, Virginia. Your extremely conscientious attention, not only to your normal duties, but to self-imposed tasks involving many hours of overtime work during the winter, spring and early summer of 1946, contributed substantially to the maintenance of a high type of professional service at this hospital. Your efforts have been an incentive to your associates and a credit to yourself and the service. You are hereby authorized to wear the Army Commendation Ribbon, by direction of the Secretary of War." Dr. Banfield graduated from the University of Oregon School of Medicine in 1943 and entered the service July 2, 1945.

#### Lieutenant Colonel Frederick L. Liebolt

Lieut. Col. Frederick L. Liebolt, New York, was recently awarded the Army Commendation Ribbon "for high degree of professional ability displayed in the capacity as chief of the Orthopedic Branch of the Surgical Service during the year 1945." The citation further stated: "Through your devotion to duty, loyalty, cooperation, industry and initiative, the Orthopedic Branch accomplished a tremendous amount of work. In fact, this service was as large as the rest of the Surgical Service combined, which service contained approximately a third of the beds in the entire hospital, which had a capacity of 3,000. It is a matter of record that for one year (1945) a total of 8,429 patients were admitted to your service, or a monthly average of 702 patients; that your service did a total of 1,121 operations or a monthly average of 93 . . . that, although your service handled this tremendous amount of material, the CDD rate averaged only 20 a month, which is proof in itself of the excellence of treatment received by patients on your service and also of the tremendous reduction in noneffective rate which this represents. The average census during this year on your service was 700, which also is evidence that the patients were not allowed on the service any longer than necessary. In addition to this patient load, it is a matter of record that your service performed a total of 548 outpatient consultations per month and 9,586 physical therapy treatments a month. It is also a matter of the surgeon's personal knowledge that this tremendous service could not have been adequately supervised and administered if you had not spent many of your off-duty hours, at night, Saturdays, Sundays and holidays on your service personally caring for the seriously ill patients and helping those who were on duty. In spite of this tremendous work load the mortality and morbidity figures for your service were extremely low and much under the average figures for the rest of the army." Dr. Liebolt graduated from Washington University School of Medicine in 1930 and entered the service Oct. 10, 1943.

#### Major Samuel Minowitz

The Army Commendation Ribbon was recently awarded to Major Samuel Minowitz, New York, "for exceptionally meritorious conduct in the performance of duties from April 25, 1945 to July 15, 1945 as chief of dispensary service, Fort Belvoir, Virginia. His keen judgment, tactful aggression, willing cooperation and loyal attention to duty enabled the Dispensary Service at this station to function with maximum efficiency through a period of extraordinary stress incident to the winter epidemic of respiratory and communicable diseases." Dr. Minowitz graduated from George Washington University School of Medicine, Washington, D. C., in 1927 and entered the service Sept. 25, 1942.

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# NAVY

## EXAMINATIONS FOR NAVY MEDICAL CORPS OFFICERS

The Bureau of Medicine and Surgery, Navy Department, has announced that examinations for the selection of candidates for appointment to the Navy Medical Corps will be held October 7 to 11, at thirty naval hospitals throughout the country. Those selected may be appointed to the grades of assistant surgeon or acting assistant surgeon with the rank of lieutenant (junior grade).

Candidates must be citizens of the United States, between the ages of 21 and 32, must be graduates of approved medical schools and must meet the physical requirements for appointment. Graduates of approved medical schools in the United States or Canada who have completed internship in accredited hospitals are eligible to take the examination for assistant surgeon. Those selected, following confirmation by the senate, will be appointed and receive orders assigning them to a naval medical facility for active duty. All students enrolled in approved medical schools who will have completed the third year of their medical course prior to the date of the examinations are eligible to take the examinations for acting assistant surgeon. On receipt by the Navy Department of certification that the candidate has satisfactorily completed his medical education, those selected will be appointed acting assistant surgeons and issued active duty orders to naval hospitals for intern training.

The examinations will be held at the naval hospitals at Annapolis, Md.; Astoria, Ore.; Bainbridge, Md.; Bethesda, Md.; Camp LeJeune, North Carolina; Charleston, S. C.; Chelsea, Mass.; Corpus Christi, Texas; Dublin, Ga.; Great Lakes, Ill.; Houston, Texas; Jacksonville, Fla.; Key West, Fla.; Long Beach, Calif.; Mare Island, Calif.; Memphis, Tenn.; New Orleans; Newport, R. I.; Norman, Okla.; Oakland, Calif.; Parris Island, S. C.; Pensacola, Fla.; Philadelphia; Portsmouth, N. H.; Portsmouth, Va.; Quantico, Va.; St. Albans, N. Y.; Sampson, N. Y.; San Diego, Calif., and Seattle.

Application forms and additional information may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C., or from naval officer procurement offices.

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## ESTABLISH OFFICE OF NAVAL RESEARCH

The establishment of the Office of Naval Research within the Office of the Secretary of the Navy was announced August 15.

A new law signed by President Truman on August 3 authorized the creation of the Office of Naval Research to succeed the Office of Research and Inventions, which has functioned since May 19, 1945 by directive of the Secretary of the Navy. The Office of Naval Research will carry on, in effect, where the Office of Research and Inventions has pioneered, with essentially the same objectives, staff and general organization.

The bulk of the work in this Navy stimulated research program is conducted by civilian scientists throughout the country, working in universities and other research institutions, including industrial research laboratories, under contract with the Navy. The research work is done in exactly the same manner as usual and the customary publication takes place in scientific journals. By means of this type of research contract the Navy taps the nation's best educational and scientific sources for ideas and new knowledge but makes no attempt to regiment or control scientific endeavor.

The chief of naval research will be the principal adviser to the Secretary of the Navy on all research matters. He will keep the chief of naval operations advised of research findings, trends and potentialities and desseminate naval research information to interested bureaus and offices within the Navy Department and to other governmental or appropriate private agencies. This position also calls for scientific research and development surveys, planning and coordinating fundamental research, recommendation on establishing or abolishing naval research laboratories and many other duties.

The planning and coordination of naval research will be aided by the Naval Research Advisory Council which is to consist of not more than fifteen persons to be appointed by the secretary from persons in civilian life who are preeminent in the fields of science, research and development work. One member of this committee will be from the field of medicine.

For fundamental research initiated by the Office of Research and Inventions during the fiscal year 1947, $45,000,000 has been appropriated to the Navy Department. Research is now being conducted in nuclear physics, medicine, physics, chemistry, mathematics, electronics, mechanics, meteorology and other fields. From the development of this program may be expected not only progress in fundamental science but also the advanced training of young scientists.

Vice Admiral Harold G. Bowen has been appointed chief of the new Office of Naval Research and Rear Admiral Luis de Florez assistant chief.

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## MEETING OF NAVY RESERVE CONSULTANTS BOARD

At a recent meeting of the Reserve Consultants Board to the Bureau of Medicine and Surgery, Vice Admiral Ross T. McIntire, Surgeon General of the Navy, expressed his appreciation for the assistance given by members of the board in establishing the residency training program as part of the bureau's postwar planning. Rear Admiral Winchell M. Craig, U.S.N.R. on inactive duty, now professor of neurosurgery at the University of Minnesota, presided over the meeting. Matters of policy and ways and means of furthering the program and expanding the specialty courses offered were discussed.

The program, which is well under way, is designed to afford naval medical officers an opportunity to train in medical specialties and to qualify for American board certification, fellowship in one of the American colleges and other marks of distinction, in addition to increasing professional proficiency and improving the standards of medical practice. The reserve Consultants Board has been most helpful to the Bureau of Medicine and Surgery in advising the Surgeon General and in making recommendations regarding the most efficient manner of attaining the objectives of the program.

As a result of the meeting two additional specialists, Dr. Andrew C. Ivy and Dr. Donald E. Hale, will be invited to become members of the Reserve Consultants Board. Dr. Ivy was formerly the scientific director of the Naval Medical Research Institute at Bethesda, Md. Dr. Hale served as a captain in the Naval Medical Corps during World War II and is now associated with the Cleveland Clinic. The board also took steps to effect a complete revision of the library lists of medical books and journals required for U. S. naval hospitals giving intern and residency type training.

Others in attendance at the meeting were Commodore Alphonse McMahon, Capt. F. J. Braceland, Capt. E. N. Broyles, Capt. Arthur M. Culler, Capt. Richard C. Eley, Capt. Howard K. Gray, Capt. Paul Greeley, Capt. Clark Johnson, Capt. Wendell Scott, Capt. Marion Sulzberger, Comdr. J. Roscoe Miller, Comdr. Charles Geschickter (all officers of the Naval Medical Reserve Corps and, with the exception of Commodore McMahon, now on inactive duty) and Dr. M. G. Westmoreland representing the Council on Medical Education and Hospitals of the American Medical Association. In addition to Vice Admiral Ross T. McIntire, the following officers represented the Bureau of Medicine and Surgery: Rear Admiral John Harper (MC), U.S.N.; Commodore M. D. Willcutts (MC), U.S.N.; Capt. M. V. Brown (MC), U.S.N. (Ret.); Capt. F. L. McDaniel (MC), U.S.N., and Capt. L. R. Newhouser (MC), U.S.N. The Office of Naval Research, Navy Department, was represented by Capt. A. J. Vorwald (MC), U.S.N.R.

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# VETERANS ADMINISTRATION

## EDUCATION PROGRAM OF THE VETERANS ADMINISTRATION

The Department of Medicine and Surgery of the Veterans Administration has embarked on a program that is without precedent in the history of federal hospitalization. The schools of medicine and other teaching centers are cooperating with the Veterans Administration in a threefold program of giving the veteran the highest quality of medical care, of affording the medical veteran the opportunity for postgraduate study which he was compelled to forego in serving his country, and of raising generally the standard of medical practice in the United States by the expansion of facilities for graduate education.

To accomplish this purpose the Research and Education Service has adopted the following program as its basic guide:

1. Utilization of the best qualified medical personnel in the country on both a full time and a part time basis for the care of veterans.
2. Continual maintenance of the highest possible standards of professional care in the medical supervision of the veteran's welfare.
3. Recognition that the spirit of education must be a permanent part of medical care by incorporating progressive educational facilities in the Department of Medicine and Surgery for the continued training of medical personnel.
4. Utilization of research as an integral part of education and the development of medical care.

To develop this program, three mediums have been utilized:

1. Public Law No. 293, 79th Congress, which allows the administrator of the Veterans Administration to employ doctors, dentists and nurses on full time, part time or fee basis. This law also allows the administrator to establish residencies to appoint qualified persons to such positions without regard to civil service or classification laws, rules or regulations and to prescribe the conditions of such employment, including necessary training and the customary amount and terms of pay during the period of such employment and training.
2. The affiliation with approved medical schools to afford teaching for residents and to recommend part time consultants and attending physicians.
3. The affiliation with national research groups, medical colleges and other interested federal and civil agencies in the development of research.

It is the conviction of the Department of Medicine and Surgery that the practice of medicine must not be subject to set hours or restrictive administrative regulations to allow the best professional care. The Veterans Administration maintains that it is essential to adopt the same type and quality of care of the patient made available in university civilian hospitals and clinics. The interpretation by the administrator of Public Law No. 293 allows sufficient latitude to make this possible by permitting him to abolish time clocks and time effort relationships in the performance of service.

The Veterans Administration offers a multitude of services to the veteran, and it must have rules and regulations to coordinate its various services and their component parts. This suggests an administrative framework which, if rigid, would be cumbersome and inefficient in medical practice and education. Efficiency can be achieved only by preserving flexibility and fluidity within this framework. The method by which this is accomplished is the administrator's power to make, fashion and amend all rules within the intent of existing laws.

The affiliation with approved medical colleges allows the essence of medical development, which is the evolutionary spirit of education, to become a basic integral part of the Department of Medicine and Surgery of the Veterans Administration. This is accomplished when medical colleges accept responsibility for the training of residents in the Veterans Administration by the dean's appointment of a supervising committee of doctors of professorial rank for the promotion of the Deans' Committee program.

It is realized that provincialism and individual and group deficiencies may tend to exist. Instructions to the field directed toward national perfection in medical care, medical personnel and administrative efficiency will tend to correct and adjust these factors. Utilization of doctors on both a full time and a part time basis enables the Veterans Administration to offer to the veteran patient the best trained medical personnel in the country. At the same time civilian medical practice does not suffer from resultant loss of personnel.

The consultant and attending doctors, part time workers and the chiefs of service and residents, full time workers, all have dual functions, i. e. the provision of medical care and the conduction of medical education. The standard of professional care is continually being developed to a higher level by the incorporation of all personnel and all facilities in educational functions.

It is agreed that the nation needs more doctors than are now available. It recognizes concomitantly the national need for good doctors who are properly trained and developed. It also recognizes the need for good specialists, properly trained and developed, and finally it recognizes that doctors are developed by teachers and not merely by technicians.

The basic element of the "Deans' Committee" program is the acceptance of the American specialty boards as the "yardstick" of specialized training which can best be achieved by close association with the medical schools. The Research and Education Service will assist in this, and it is concerned in all the related problems.

Facilities of the Veterans Administration to afford training to physicians in Veterans Administration hospitals and clinics are limited by the physical character of the veteran (no children may be treated at Veterans Administration hospitals or clinics), the legislation pertaining to medical care available to the veteran (only service connected disabilities can be treated at Veterans Administration outpatient clinics) and the physical plants and locations thereof (when isolated geographically from centers of medical education). Therefore the provision is made to allow as much as 50 per cent of training away from Veterans Administration hospitals and clinics. The need for adequate personnel and training is the rationale of the policy of the Veterans Administration to build medical centers on the campus of medical schools.

At the present time the educational program introduced into the Department of Medicine and Surgery is entirely on a postgraduate level, limited to resident training, directed toward specialty board certification. The personnel affording such training are those recognized as properly qualified teachers by the specialty boards. The personnel given such training are those recommended by experienced judges of educational material, the medical schools, as capable of qualifying for their boards on the basis of previous training and ability. A non-Veterans Administration group, such as the Deans' Committee, cannot by law appoint any personnel to the Veterans Administration. They can, however, recommend personnel about whom they alone are qualified to judge educationally; viz., consultants, attending men and residents.

The Veterans Administration retains full responsibility for the care of patients, including professional treatment (a legal responsibility delegated by the President), and the school of medicine accepts responsibility for all graduate education and training.

At the request of the chief medical director of the Veterans Administration, the Division of Medical Sciences of the National Research Council has established a committee on veterans' problems. This committee will coordinate research activities for all federal and civil agencies in relation to veterans' problems and is in the position to provide a quality of advisory service heretofore unobtainable elsewhere in the United States.

The veteran will receive the best care the medical profession can afford only if the best doctors can be given the opportunity to practice the best medicine. This necessitates such personnel being given good facilities and the minimum of obstruction by administrative routines. Likewise it necessitates the best doctor appreciating the full significance of his responsibility to the veteran and accepting it to the fullest extent. This will necessitate a greater expenditure of time and effort than average by the doctors in the interest of the veteran.

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## LAND FOR FIVE NEW VETERANS' HOSPITALS

President Truman has approved acquisition of land for five new Veterans Administration hospitals, the transfer of two surplus military hospitals to the Veterans Administration for temporary use and major changes in the Veterans Administration hospital construction programs in Oklahoma and Missouri. The new sites are at Toledo, Ohio; Madison, Wis.; New Orleans; Dallas, Texas, and Klamath Falls, Ore.

The Toledo property, 160 acres of land just outside the western city limits, will be the site of a 1,000 bed neuropsychiatric hospital.

The Madison property, 24 acres of land within a mile of the University of Wisconsin Medical School and Hospital, will contain a 500 bed tuberculosis hospital. The site also is within 2½ miles of other Madison hospitals.

The New Orleans property, 5.6 acres of land close to Tulane University Medical School and Charity Hospital, will be the site of a 500 bed general medical and surgical hospital.

The Dallas property, 24 acres of land in the heart of the proposed Dallas medical center, will be the site of a 500 bed general medical and surgical hospital. Most of the property is owned by the Southwestern Medical Association, which recently purchased 80 acres for a new Southwestern medical college. The Veterans Administration site also is close to the new Dallas city-county hospital.

The Klamath Falls property, 16 acres of land just inside the eastern city limits, will contain a 200 bed general medical and surgical hospital. The site is about 1½ miles from the business center of Klamath Falls.

Major changes in the Veterans Administration hospital construction program in Oklahoma include transfer to the Veterans Administration of the Naval Hospital buildings at Norman, Okla., for temporary use as a 750 bed neuropsychiatric hospital, construction at the Norman site of a permanent 750 bed neuropsychiatric hospital for treatment of chronic cases, and construction of a 1,000 bed general medical and surgical hospital at Oklahoma City, with about 250 of the beds to be set aside for treatment of acute neuropsychiatric cases. This project is subject to a future appropriation.

Major changes in the Veterans Administration hospital construction program in Missouri are: 1. Construction in St. Louis of a new 1,000 bed general medical and surgical hospital close to the city's two medical schools and cancellation of plans for a 500 bed neuropsychiatric hospital. The site for the 1,000 bed hospital has not been selected yet. 2. Conversion of the present general medical and surgical hospital at Jefferson Barracks, Mo., to a neuropsychiatric hospital for chronic neuropsychiatric cases, and increasing the capacity of the hospital to 1,097 beds by building a 500 bed addition. 3. Cancellation of plans for a 1,000 bed neuropsychiatric hospital for chronic cases, previously scheduled for an unselected site in southern Missouri.

A restudy of future Veteran Administration bed requirements resulted in the change of plans.

## NATIONAL RESEARCH COUNCIL APPOINTS COMMITTEE ON VETERANS MEDICAL PROBLEMS

The Division of Medical Sciences of the National Research Council has appointed an advisory committee for veterans medical problems. This committee will act as did the similar committees of the Division of Medical Sciences during the war to advise the Veterans Administration regarding problems related to the medical care of the veteran and also regarding medical research to be carried out in various institutions with funds supplied by the Veterans Administration. The members of the committee are Dr. O. H. Perry Pepper, *Chairman*, University of Pennsylvania, School of Medicine, Philadelphia; Dr. Edward D. Churchill, Massachusetts General Hospital, Boston; Dr. Winchell McK. Craig, Mayo Clinic, Rochester, Minn.; Dr. Michael E. De Bakey, Tulane University of Louisiana School of Medicine, New Orleans; Dr. Hugh Morgan, Vanderbilt University School of Medicine, Nashville, Tenn.; Dr. Perrin H. Long, Johns Hopkins University School of Medicine, Baltimore; Dr. Francis J. Braceland, Mayo Clinic, Rochester, Minn.; Dr. William C. Menninger, Menninger Clinic, Topeka Kan.; Dr. Milton C. Winternitz, Yale University School of Medicine, New Haven, Conn.; Dr. Cornelius P. Rhoads, Memorial Hospital, New York; Dr. Morris Fishbein, American Medical Association, Chicago; Dr. Louis I. Dublin, Metropolitan Life Insurance Company, New York; Dr. J. Roscoe Miller, Northwestern University Medical School, 303 East Chicago Avenue, Chicago.

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# PUBLIC HEALTH SERVICE

## CANCER CONTROL PROGRAM

Senior Surgeon Austin Vance Deibert, U. S. Public Health Service, who has been liaison officer with U. S. Army Headquarters, Ninth Service Command, Fort Douglas, Utah, has been reassigned to Washington, D. C., as chief of the new Cancer Control Section, States Relations Division, Public Health Service. The Cancer Control Section will administer a program through grants-in-aid to states, $2,500,000 having been identified by Congress for this purpose for the year ending June 30, 1947. This program will be similar to the programs now being operated for venereal disease control, tuberculosis control and general health.

Federal funds may be used by states to establish and maintain cancer detection clinics, tissue diagnosis and other services. Also authorized is the training of public health personnel and private physicians, surgeons, radiologists and pathologists. Epidemiologic services for which funds may be used by states include statistical units for the collection and analysis of morbidity reports and the maintenance of local tumor registries. Payment for special diagnostic procedures and radiation therapy are also included. The National Cancer Institute of the National Institute of Health, research branch of the Public Health Service, is cooperating actively in the development of this new program.

The two and one-half million dollar fund for cancer control is part of the $14,250,000 allotted to states for general health in the grant-in-aid program of the U. S. Public Health Service.

## MEETING OF PATHOLOGY STUDY SECTION

The first session of the Pathology Study Section of the Research Grants Division of the National Institute of Health was held at the Institute in Bethesda, Md., August 16.

The Pathology Study Section is one of more than twenty groups of prominent consultants advising in the whole field of medical research. It is composed of Dr. Paul Cannon, University of Chicago, chairman; Drs. W. A. DeMonbreun, Vanderbilt University, Nashville, Tenn.; W. H. Feldman, Mayo Foundation, Rochester, Minn.; W. D. Forbus, Duke University, Durham, N. C.; H. Goldblatt, Cedars of Lebanon Hospital, Los Angeles; J. S. McCartney, University of Minnesota, Minneapolis; A. R. Moritz, Harvard University, Boston; A. R. Rich, Johns Hopkins University, Baltimore; J. F. Rinehart, University of California, San Francisco; H. P. Smith, Columbia University, New York; representatives of the Surgeons General of the U. S. Army, U. S. Navy, Medical Department of the Veterans Administration, members, and R. D. Lillie, National Institute of Health, Bethesda, Md., executive secretary.

Projects were considered and recommendations made to the National Advisory Health Council for final action. The section members agreed that individually they would promote necessary research in the field of pathology by private suggestions but would not make any collective attempts to impose research projects on investigators or institutions. They approved the attitude of the Public Health Service that the scientific freedom of the research investigators must not be restricted.

# PHYSICIANS SEPARATED FROM SERVICE

## ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

### Alabama

Donald, John W.....Pineapple
Kahn, Stanley S.....Gadsden
McEver, Edward A.....Gadsden
Miles, Nathan E.....Birmingham
Odom, Corley W.....Irondale
Patterson, John C.....Tuscaloosa
Sweeney, Donald B.....Birmingham

### Arizona

Marino, Frank X.....Phoenix
Patt, Howard H.....Phoenix
Polson, Donald A.....Phoenix
Steen, William B.....Tucson
Tse, Wing Yan.....Ganado
Walsh, James S.....Douglas

### Arkansas

Barger, O. B.....Mountain Home
Gray, John T.....Little Rock
Headstream, James W.....Batesville
Landers, Gardner H.....Batesville
Mobley, Max J.....Morrilton
Pickens, James L.....Bentonville
Stokes, George H.....Little Rock

### California

Colburn, Justin R.....Oakland
Fine, Max.....San Francisco
Horn, Carl E.....Santa Clara
Lynch, Richard L.....Jackson
Mearns, Robert B.....Berkeley
Miller, Loren S.....Los Angeles
Mills, William W.....San Mateo
Mitchell, Robert J.....Fresno
Moss, Saul.....Los Angeles
Murphy, John M.....Oakland
Murphy, William K.....San Francisco
Murray, David T.....Santa Monica
Proctor, Wallace.....Hollywood
Schaefer, John H.....Sacramento
Schumann, William R.....South Pasadena
Sciullo, Vincent F.....Santa Monica
Smith, Harold D.....Pomona
Thurman, Hill C.....San Diego
Truax, Hugh C.....Los Angeles
Tullius, Philip G.....San Diego
Westwater, John O.....Los Angeles
Young, John P.....Lemoore

### Colorado

Ireland, Paul M.....Pueblo
McKenna, Daniel S.....Denver
Mall, Jacob O.....Estes Park
Martin, Christopher H.....Durango
Milton, John B. Jr.....Denver
Mosko, Joel.....Denver
Norman, James S.....Pueblo
Schatz, Irvin I.....Pueblo
Smith, Bryce D.....Denver
Stevens, William H.....Denver
Van Bergen, Thomas McL.....Denver

### Connecticut

Anton, Michael C.....New Haven
DePasquale, John A.....Hartford
Moore, Roger W.....Stafford Springs
Perlman, Aaron W.....New Haven
Pitock, Morris P.....Fairfield
Robinson, Wilfred J.....Broad Brook
Rozen, Alan A.....New Haven
Ryan, John J. D.....Stamford
Sellew, Robert C. Jr.....North Canaan
Shaffer, Thomas E.....Hamden
Spiegel, Charles M.....New Haven
Wood, Horatio C. III.....Wilton

### District of Columbia

Daniels, Worth B.....Washington
Derrick, William S.....Washington
Feinstein, Harold R.....Washington
Gilbert, James B.....Washington
Horan, Harry W. Jr.....Washington

### District of Columbia—Continued

Hower, Dorn S.....Washington
Kneipp, John A.....Washington
McCarthy, Joseph J. Jr.....Washington
Michael, Morris I.....Washington
Molofsky, Leonard C.....Washington
Nesbitt, John W.....Washington
Orleans, Harry B.....Washington
Owen, Robert F.....Washington
Rose, Morton H.....Washington
Ryon, William A.....Washington
Shwartz, Samuel.....Washington
Tievsky, George.....Washington

### Florida

Cassel, Chester.....Miami
Kodack, Albert.....Tampa
Manley, David B.....Holopaw
Needelman, Harry.....Miami Beach
Phelan, William J.....Key West
Wilkins, William B.....Palm Beach

### Georgia

Goodman, Paul H.....Atlanta
Moore, Charles W. C.....Lindale
Reifler, Reuben M.....Macon
Stegall, Robert E.....Moultrie

### Illinois

Brazis, Peter T.....Chicago
Chess, Stephen J.....Chicago
Chesser, Ian M.....Palos Heights
Hohman, Kurt E.....Chicago
Larimore, Granville W.....Chicago
Maslovitz, Max.....Chicago
Mehlman, Jerome S.....Chicago
Melnick, Perry J.....Chicago
Melone, John O.....Chicago
Miller, Milton L.....Chicago
Mizen, Michael R.....Chicago
Mueller, Hilbert M.....Chicago
Mulvill, James E.....Chicago
Niec, Adam A.....Chicago
Orsborn, Ernest V.....Chicago
Palermo, Amiel L.....Chicago
Parmacek, Louis.....Chicago
Pawlikowski, Joseph S.....Chicago
Pearlman, Maurice D.....Chicago
Peyton, Samuel R.....Chicago
Piszkiewicz, Frank J.....Chicago
Popuch, Louis D.....Chicago
Richman, Samuel H.....Rock Island
Robert, Oscar T.....Chicago
Ross, Percy J.....Chicago
Rubenstein, Boris B.....Chicago
Sanders, Alexander.....Chicago
Schindler, Milton M.....Chicago
Schwartz, Arthur H.....Chicago
Segal, Morey M.....Chicago
Shoger, Gilbert.....Chicago
Skolnik, Emanuel M.....Chicago
Slaw, Adam.....Delavan
Spierer, Eugene.....Chicago
Steer, Albert E.....Springfield
Steward, Lee A.....Mattoon
Suino, John B.....La Salle
Thatcher, Harold W.....Chicago
Vidal, Candido B.....Chicago
Varyonis, George P.....Urbana
Waldman, Jerome.....Chicago
Ziegler, Rudolph W. Jr.....Chicago

### Indiana

Clark, Joseph H.....Rossville
Horton, George R.....Peru
Jackson, Katherine E.....Fort Wayne
Lansford, John.....Redkey
Meyer, Theodore O.....Bluffton
Michael, Isaac E.....Frankfort
Northland, William E.....Hammond
Parker, Earl E.....South Bend
Schwartz, David I.....Fort Wayne
Tweedal, Daniel C.....Evansville

### Indiana—Continued

Urschel, Dan L.....Mentone
West, Joseph L.....Indianapolis
Willett, Irving H.....Fort Wayne
Young, John M.....Indianapolis

### Iowa

Kuker, Leo H.....Carroll
Martin, James W.....Holstein
Megorden, William H.....Mt. Pleasant
Moen, Berwyn H.....Inwood
Sanford, Elmer B.....Des Moines
Smazal, Stanley F.....Davenport
Tolliver, Hillard A.....Charles City
Van Besien, George J.....Decorah

### Kansas

Kasha, Robert L.....Wichita
Knapp, Leslie E.....Wichita
Sohlberg, Robert.....McPherson

### Kentucky

Haydu, Bela W.....Campbell
Jones, Thomas R.....La Center
Moody, Henry H.....Cynthiana
Nixon, Waldense C.....Louisville
Oliver, Earl P.....Louisville
Speevack, Maher.....Munfordville
Weaver, Raymond H.....Fort Thomas
Williams, James S.....Paintsville

### Louisiana

Alldredge, Rufus H.....New Orleans
Ogden, Frank B.....Bastrop
Turner, Roy H.....New Orleans

### Maine

Cutler, Lawrence M.....Bangor
Fogg, Charles E.....Portland
Webber, Edward P.....Winthrop

### Maryland

Bacon, Frank S.....Kensington
Barnaby, John W.....Baltimore
Baylus, Herman H.....Baltimore
Beacham, Edmund G.....Baltimore
Coffman, Robert T.....Baltimore
Di Paula, Frank R.....Baltimore
Eastman, Sylvester K.....Hyattsville
Ermshar, Herman F.....Reisterstown
Gladding, Walter R.....Bethesda
Hartz, Alvin S.....Baltimore
Hills, Arthur G.....Garrison
Hyslop, Henry W.....Salisbury
Kohlerman, Nicholas J.....Baltimore
Lewis, Lloyd G.....Riderwood
Mandy, Arthur J.....Baltimore
Pincoffs, Maurice C.....Baltimore
Ramsey, James H.....Aberdeen
Reier, Charles H.....Govans
Schneider, Leo V.....Glen Dale
Shub, Maurice I.....Baltimore
Vandergrift, William B.....Baltimore
Werelius, Carl Y.....Baltimore
White, James E.....Baltimore

### Massachusetts

Gordon, John E.....Boston
Lee, You How.....Boston
Madoff, Irving M.....Clinton
Magnuson, Paul L.....New Bedford
Mayo, Leroy E.....Holden
Medalia, Leon S.....Boston
Monaghan, Leo B.....Brockton
Moravec, Max E.....Boston
O'Keeffe, Arthur F.....Milton
Paddock, Franklin K.....Pittsfield
Ramin, Benedict.....Wellesley
Rapoport, Bernard.....Boston
Read, Emerson A.....Wollaston
Roopenian, Aram.....South Boston
Rosston, Cyril P.....North Adams
Shubert, William M.....Dorchester

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# PHYSICIANS SEPARATED FROM SERVICE

### Massachusetts—Continued

Shyavitz, Max H.....Lowell
Smith, Richard W.....Cambridge
Steinberg, Saul.....Boston
Sturnick, Melvin I.....Allston
Trakas, John C.....Boston
Van Raalte, Leslie H.....Quincy
Vinal, Raymond G.....Norwell
Vogel, Ernest J.....Arlington
Wheeler, Earl B.....Allston
Wildberger, William C.....Roxbury

### Michigan

DeVries, Daniel.....Grand Rapids
Keyes, John W.....Detroit
McClure, Robert W.....Detroit
McCormick, John K.....Grand Rapids
McEachran, Hugh D.....Iron Mountain
McNamara, Bradley E.....Lansing
Millwee, Robert H.....Ann Arbor
Nicholson, John B.....Marquette
Quigley, Eugene H.....Dearborn
Scott, William A.....Kalamazoo
Simons, Edward J.....Detroit
Wolfe, Kenneth P.....Alma

### Minnesota

Beizer, Lawrence H.....Rochester
Bessesen, Daniel H.....Excelsior
Booren, Jack C.....Thief River Falls
Delmore, Robert J.....Roseau
Deters, Donald C.....St. Paul
Hamlon, John S.....St. Charles
Heise, Philip von R.....Winona
Hursh, Philip W.....Hibbing
Kennedy, Thomas J.....St. Paul
Lindahl, Wallace W.....Rochester
Lundquist, Curt W.....Winona
Luth, Duncan V.....West Duluth
McCaffrey, Fabian J.....Minneapolis
McEvoy, Joseph P.....St. Paul
Medlin, Charles F.....Minneapolis
Menold, William F.....St. Paul
Naegeli, Arnold E.....Minneapolis
Patch, Orien B.....Duluth
Petersen, Robert T.....Minneapolis
Proudfit, Charles H.....Rochester
Scheifley, Charles H.....Rochester
Schultz, Peter J.....Minneapolis
Smith, Paul M.....Rochester
Smith, Theodore S.....Minneapolis
Spencer, George N.....St. Charles
Stolpestad, Herbert L.....St. Paul
Strandell, Everett L.....St. Paul
Van Gordon, Donald J.....Crookston
Wolstan, Simon D.....Minneota
Wozencraft, Jean P.....Rochester

### Mississippi

Jabour, Ernest P.....Vicksburg
Long, Lawrence W.....Jackson
Ramay, Allen E.....Water Valley
Robbins, Samuel G.....Vicksburg

### Missouri

Gillespie, Orville F.....Albany
Hawkins, George L. Jr.....Webster Groves
Lowry, Charles F.....Kansas City
Moore, Donald M.....St. Louis
Mueller, Morris A.....Clayton
Schumake, Lawrence P.....St. Louis
Smith, Garland F.....St. Louis
Stroff, Stanley C.....Trenton
Zarlengo, Frank N.....St. Louis

### Montana

Conklin, Karl P.....Bozeman
Pratt, Sidney C.....Miles City
Tanglin, Walter G. L.....Polson

### Nebraska

Reynolds, Verne J.....Lincoln
Soltz, Gustav D.....Omaha

### New Hampshire

Archibald, John F.....Manchester
Berube, Norman C.....Manchester
Galt, Jesse McC.....Hanover
Hardham, John F.....Hanover
Palma, Anthony R.....Suncook
Ranger, Conrad O.....Manchester

### New Jersey

Blenkle, Victor A.....Jersey City
Dougherty, Daniel D.....Hoboken
Levy, Morris F.....Hoboken
Lomhoff, Irving I.....Newark
McAlpine, Paul T.....Summit
McGuinn, William B.....South Orange
Mintz, Alvin R.....Morristown
Molitch, Matthew.....Atlantic City
Moriarty, John J.....Bloomfield
Nafash, Shafeek.....Union City
Patterson, John C.....Freehold
Petroff, Boris P.....Upper Montclair
Petrone, Peter A.....Newark
Racz, George.....New Brunswick
Robbins, Howard C.....Bridgeton
Rose, Cordt E.....Oradell
Rosenberg, Alvin A.....Morristown
Rude, Richard S.....Plainfield
Russillo, Philip J.....Jersey City
Ryan, Heber H. Jr.....Upper Montclair
Strelinger, Alexander.....Elizabeth
Sutton, Harold L.....Newark
Van Dyk, Orrin J.....New Jersey
Warnecke, Rudolph E.....Burlington
Yudkoff, William.....Bayonne

### New Mexico

Black, John P. M.....Carlsbad
Cramer, Oliver S.....Albuquerque
Foster, Lloyd G.....Silver City
Higgins, George A. Jr.....Albuquerque
Morgan, Thomas L.....Hobbs
Stapen, Milton H.....Dulce
Waldriff, George A.....Albuquerque
Walker, Albert G.....Fort Bayard
Wiggins, James W.....Estancia
Williams, Thomas B.....Hot Springs
Withrow, John A.....Albuquerque

### New York

Abrashkin, Mortimer D.....New York
Barney, Clyde O.....Syracuse
Berry, Frank B.....New York
Blaha, Louis C.....Jackson Heights
Cahn, Paul.....Utica
Canton, Henry H.....Watervliet
Caruso, Peter V.....New York
Florio, William A.....Brooklyn
French, Frank S.....Rochester
Friedlander, Harry S.....New York
Gans, Robert W.....Orangeburg
Gray, Frank D. Jr.....New York
Hyman, Morris.....New York
Jones, Gerald F.....Utica
Kanan, Leslie.....Bronx
Kantor, Herman I.....New York
Katzenbach, Charles B.....New York
Klauber, Bernard S.....New York
Lapovsky, Arthur J.....Brooklyn
Leone, Alfred D.....Brooklyn
Levine, Leon H.....Bronx
Levine, Robert R.....Brooklyn
Lico, Serrie R.....Bronx
Littleton, Jesse T. III.....Corning
Lutz, William H.....Brooklyn
Lyman, Robert H.....Fillmore
McAleese, James A.....Freeport, L. I.
McCarty, William R.....New York
McElwee, Charles H.....Ithaca
MacDonald, William G.....New York
Madden, John P. L.....Brooklyn
Makarewicz, Stanislaus J.....Buffalo
Marcus, Raymond M.....New York
Margulies, Murray E.....Brooklyn
Melomo, Vincent A.....Brooklyn
Mendeloff, Joseph.....New York
Mendelson, Michael.....Binghamton
Michtom, Robert J.....Brooklyn
Miles, Harold C.....Olean
Millman, Samuel.....Brooklyn
Mills, Moore A.....New York
Milowsky, Jack.....New York
Mordecai, Lindley R.....New York
Mottola, Samuel J.....Tuxedo Park
Motyloff, Leon.....New York
Mueller, Alexander A.....New York
Muhlfelder, Werner.....Chatham
Murphy, Frank C.....Brooklyn
Murphy, William P.....Syracuse
Nanna, Anthony V.....Bronx
Neuhaus, George.....Laurelton, L. I.
Oislander, William B.....Bronx
Paolillo, Joseph P.....Brooklyn
Pauker, Sidney C.....New York
Pfeiffer, John B. Jr.....Hollis, L. I.
Pinkus, Jacob B.....New York
Prose, Philip H.....New York
Rakofsky, Max.....Brooklyn
Raphael, Alfred J.....New York
Rasi, Howard B.....Brooklyn
Reid, Frederick K.....Rome
Reiter, Samuel E.....Bronx
Rogliano, Francis T.....Rye
Romeo, Bruno J.....Jackson Heights
Ross, Milton G.....New York
Ryterband, Louis.....Brooklyn
Salm, Heinz.....Hudson
Salmowitz, Arnold.....Richmond Hill
Schneier, M. R.....Woodhaven Queens
Schonfeld, William A.....New York
Schwartz, Morris.....Middle Village, L. I.
Sconzo, Joseph J.....Central Islip
Selden, Charles.....Brooklyn
Shapiro, Lester.....New York
Shields, George H.....Bronx
Sica, Frank A.....New York
Silberstein, Alexander G.....New York
Slater, Ralph.....Bronx
Small, Sidney.....Brooklyn
Sporn, Harry.....Brooklyn
Steindler, Arthur.....Flushing, L. I.
Sternberg, William H.....Brooklyn
Stevens, Roland E. Jr.....Rochester
Stevenson, Edward D.....Marcy
Stubenbord, Jess.....Buffalo
Summa, Andrew A. J.....Syracuse
Tannenbaum, Oscar.....New York
Thaler, Maurice.....New York
Vernon, Chester W.....New York
Von Stein, William G.....New York
Wagner, Arnold L.....New York
Watts, Joseph C.....Bayside
Wedding, Erling S.....Brooklyn
Werle, Carl W.....Commack, L. I.
Willie, Jose A.....New York
Winograd, Eleazar M.....Brooklyn
Winokur, Solomon.....Jamaica
Wolf, Alexander.....New York
Wolff, Heinz O. L.....New York
Wood, Charles L.....New York
Woolsey, Robert G.....Brooklyn
Yohalem, Stephen B.....Crestwood
Zahm, William N.....New York
Zimmer, Edward.....New York
Zinsser, Hans H.....New York
Zurrow, Herman B.....Bronx

### North Carolina

Brown, Edwin W.....Asheville
Choate, James W. Jr.....Salisbury
Christian, John D.....Rocky Mount
Davis, Gilbert B.....Fairmont
Gale, Elmer T.....Clinton
Jarman, Fontaine G. Jr.....Roanoke Rapids
McEntire, Harry E.....Wilmington
McGimsey, James F. Jr.....Morganton
McKee, John S. Jr.....Morganton

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# PHYSICIANS SEPARATED FROM SERVICE

### North Carolina—Continued

Morse, Seymour.....Wilmington
Newman, George J.....Murphy
Ogburn, Lundie C.....Winston-Salem
Parker, Shepherd F.....Shelby
Patterson, Joseph F. Jr.....New Bern
Patterson, Rex D.....Liberty
Price, William B.....Fayetteville
Ranson, John L. Jr.....Charlotte
Senter, William J.....Chalybeate Springs
Tanner, Kenneth S. Jr.....Rutherfordton
Tatlock, Hugh.....Fayetteville
Temple, Rufus H.....Kinston
Walker, Samuel H.....Mt. Gilead
Ward, Wallace C.....Raleigh
Watts, Walter M.....Asheville
Wood, Ernest H. Jr.....New Bern

### Ohio

Burrows, Lilburn I.....Cleveland
Faessler, Edwin C.....Norwood
Gordon, Harold J.....Columbus
Harnick, Manning G.....Middleport
Katz, Harry L.....Cleveland
Kirk, Gilman D.....Columbus
Lederman, Edward I.....Cleveland
MacMillan, Robert J.....Cincinnati
Montanus, William P.....Springfield
Nellins, Donald C.....Cleveland Heights
Ramsayer, Ralph K.....Canton
Riemer, Harry J.....Cleveland
Roback, Harry N.....Cuyahoga
Safdi, Stuart A.....Cincinnati
Sawyer, Benjamin F.....North Star
Scherger, Frank E.....Delphos
Seidemann, Hans.....Cleveland Heights
Siegel, Samuel R.....Cleveland Heights
Simms, Charles E. Jr.....Dayton
Smith, Earl E.....Shaker Heights
Smythe, John W. Jr.....Cleveland
Soloway, Lewis R.....Cleveland
Stoneburner, Wesley H.....Wooster
Strong, Joseph M.....Cleveland
Thompson, John M. Jr...Upper Sandusky
Warner, Frank M.....Barberton
Weiss, Morris.....Cleveland
Wenzel, Thomas P.....Cincinnati
Woodworth, Phillip J.....Athens
Ziegler, Samuel R.....Youngstown

### Oklahoma

Alexander, Gilbert H.....Muskogee
Allen, James T.....Boise City
Anderson, William D.....Claremore
Bielstein, Charles M.....Oklahoma City
Bolend, Rex G.....Oklahoma City
Cooley, Ben H.....Norman
Cosby, Glenn W.....Alva
Darden Paul M.....Oklahoma City
Deutsch, Harry L.....Stilwell
Downey, James W.....Chickasha
Edwards, John W.....Tulsa
Ellis, Leonard J. Jr.....Oklahoma City
Ford, Harry C.....Oklahoma City
Freede, Henry J.....Oklahoma City
Fulmer, Herman R.....Ringling
Goad, Lloyd H.....Oklahoma City
Greer, Allen E.....Kingfisher
Highland, John E.....Oklahoma City
Hollingsworth, Charles E.....Chickasha
Klein, Jacob E.....Talihina
Leslie, Samuel B. Jr.....Okmulgee
Lewis, Bert H.....Shawnee
Logue, Richard M.....Tulsa
Maxey, O. D.....Bryant
Merrell, Webber W.....Oklahoma City
Olson, Donald H.....Bartlesville
Orr, Herbert S. Jr.....Tulsa
Overbey, Charles B. Jr.....Mangum
Parrish, Wilmer E.....Ponca City
Patterson, Frank L. Jr...Mountain View
Pearce, Charles M.....McAlester
Smith, Donald H.....Fairview
Stuart, Frank A. Jr.....Tulsa
Trow, Thomas A. Jr.....Okemah

### Oregon

Baker, Russel L.....Gaston
Metz, Paul.....Portland

### Pennsylvania

Banks, Roland W.....Yeadon
Cinberg, Leonard A.....Philadelphia
Fischer, Carl R. Jr.....Philadelphia
Gottesman, Leonard.....Uniontown
Henry, Richard J.....Philadelphia
Horwitz, Thomas.....Philadelphia
Jones, Ceirianog H.....Scranton
McGague, Ned J.....Munhall
McCarty, Joseph C.....Norwood
McFarland, K. T. H. Jr.....Coraopolis
McHenry, DeArmond J.....Benton
McKee, Thomas C.....Kittanning
McKeown, Henry G.....Renovo
Malia, Joseph E.....Pittsburgh
Manstein, Isadore G.....Philadelphia
Meals, Melvin J.....Pittsburgh
Meilicke, Francis F.....Philadelphia
Mikowski, Izydor E.....Philadelphia
Miller, Connell H.....Sligo
Moore, Charles B.....Philadelphia
Moore, Edward L.....Crucible
Munz, Richard W.....Erie
Murphy, James H.....Curwensville
Murt, Roland S.....Philadelphia
Nass, Joel.....Macungie
Newell, William K.....Seward
Nicholas, Leslie.....Philadelphia
Paschal, George W. Jr.....Philadelphia
Perer, William A.....Pittsburgh
Perrone, Frank P.....Wilmerding
Prout, John W.....Johnstown
Ralston, Edgar L.....Murrysville
Reber, Jacob.....Philadelphia
Riehs, Jules A.....Philadelphia
Robinson, Wm. H. III...Roaring Spring
Rosenstein, Herman.....Philadelphia
Rowland, George A.....Jenkintown
Sloss, James O.....Beaver
Souders, Benjamin F.....Reading
Stein, Samuel H.....Philadelphia
Strawn, Leo S.....West Newton
Strunk, Charles F.....Philadelphia
Stull, William P.....Carlisle
Sussman, Marcel S.....Philadelphia
Taft, William C.....Philadelphia
Tattersall, Harold A...New Cumberland
Thumma, Ralph W.....Enhaut
Toll, Marselius W.....Osborne Read
Turner, Wayne E.....Hazelton
Vujan, Alexander S.....Pittsburgh
Waterhouse, Robert P.....Philadelphia
Watterson, Kenneth W.....Meadville
Weidner, John H.....Reading
Weisberg, David.....Pittsburgh
Widerman, Arnold.....Philadelphia
Wilmer, Daniel.....Philadelphia
Yevitz, William J.....Scranton
Zubrow, Sidney N.....Philadelphia

### South Dakota

Austin, Dean C.....Vermillion
Bockoven, John S.....Clark
Charbonneau, Yale H.....Mitchell
Crawford, Robert A.....Rapid City
Haggar, David K.....Sioux Falls
Kirby, Charles K.....Springfield
Miller, John R.....Big Stone City
Sattler, Theodore H.....Yankton
Zellhoefer, Howard W. K....Sioux Falls

### Tennessee

Aste, John M.....Memphis
Carreras, Wilfred C.....Bristol
Davis, Marion I. J.....Nashville
De Mere, Flurry M.....Memphis
Harris, Frank F.....Chattanooga
Kallestad, Leonard L.....Knoxville
Keefe, Jack E. III.....Nashville
Kyle, Joseph W.....Tullahoma
Lowe, Jere W.....Cookeville

### Tennessee—Continued

Lyon, Joseph S.....Memphis
Markle, Philip M.....Memphis
Mears, Burtis J.....Knoxville
Mella, Charles A. Jr.....Nashville
Nunn, Joshua H.....Ripley
Odle, Van Albert.....Memphis
Pope, Herbert L.....Knoxville
Proffitt, James N.....Maryville
Range, John A.....Knoxville
Smith, George L.....Decherd
Taylor, Harlan H.....Cookeville
Varner, Claude F.....Memphis
Watson, Fred C.....Lexington
Williams, Wilson C.....Nashville
Wyatt, John L.....Nashville

### Texas

Campbell, Ralph E.....Fort Worth
Floyd, Joe R.....El Paso
McNabb, Joseph F.....Price
Madison, John C.....Navasota
Martin, Thomas A. Jr.....Dallas
Matthews, J. D. Frederick..San Antonio
Melcher, Truman O.....Port Lavaca
Multhauf, A. William.....El Paso
Ohlhausen, Sidney G.....Houston
Pollard, Claude Jr.....Austin
Sanderson, Thomas A.....Houston
Smith, Walter S.....Marlin
Spence, Charles H. Jr.....Galveston
Talley, John E.....Hamilton
Taylor, James G. Jr.....Denton
Tunnell, John W.....Gregory
Winter, John W.....San Antonio

### Virginia

Booker, Armistead P.....Charlottesville
Drummond, Henry S.....Arlington
Finne, Charles O. Jr.....Lynchburg
Frank, Joe L. Jr.....Richmond
Harvey, Watkins P.....Lynchburg
Mallory, Brooke B.....Lexington
Moore, William T.....South Hill
Obenschain, John T.....Staunton
Ochsner, Albert J. II.....Spring Grove
Peple, William L. Jr.....Richmond
Powell, John D.....Stuart
Richardson, Emmett V.....Marion
Schools, Percy E. Jr.....Richmond
Shelton, Aubrey L.....Norfolk
Sibley, William L.....Roanoke
Sutherland, George F.....Grundy
Taylor, Arthur H. Jr.....Richmond
Vanderlinde, Robert J.....Max Meadows
Walton, William W.....Chester
Webb, Herbert F.....Richmond
Whitehead, David C.....Chatham
William, Edward H.....Richmond
Williams, Carington Jr.....Richmond

### Washington

Coverstone, Vernon A.....Spokane
Davidson, Harold J.....Seattle
Ditter, Francis J.....Yakima
Holman, Colin B.....Seattle
Keyes, Donald C.....Bellingham
Russell, Charles E.....Seattle
Soss, Thomas I.....Spokane
Willard, Don G.....Tacoma

### Wyoming

Kinoshita, Robert S.....Heart Mountain

### Canada

Wagman, Murray.....Toronto

### Puerto Rico

Buso, Roberto.....Santurce
Jiminez-Torres, Carlos F.....Mayaguez
Raffucci-Arce, Francisco L.....Rincon

### Ireland

McGrath, Denis J.....Galway

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# MEDICAL OFFICERS RELEASED BY THE NAVY

## NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

### Colorado

Frangos, Pete G.....Denver
Lynn, Vincent S.....Denver
Scott, William C.....Denver

### Delaware

Hardin, Hal W.....Wilmington
Poole, Gerald O.....Wilmington

### District of Columbia

Pearson, Jed W. Jr.....Washington
Schroeder, Charles F.....Washington
Wilson, Thomas A.....Washington

### Georgia

Eskridge, Frank L. Jr.....Atlanta
Grizzard, Vernon T. Jr.....Social Circle
Hopkins, William A.....Atlanta
Johnson, Charles A. Jr.....Elberton
Newsom, Francis C.....St. Simons Island
O'Daniel, James F.....Ellijay
Wilson, Eugene B.....Macon

### Indiana

Cacia, John J.....Evansville
Jones, Robert F.....Vincennes
Royster, Robert A.....Evansville
Sudranski, Herbert F.....Indianapolis
Wiethoff, Clifford A.....Seymour

### Iowa

Matheson, John H.....Des Moines
Puntenney, Andrew W.....Algona
Storck, Robert D.....Pocahontas

### Kansas

Chaney, George C.....Independence
Dreher, Henry S. Jr.....Salina
Nichols, Arthur L. Jr.....Kansas City
Piper, Donald K.....Osawatomie
Tucker, Jack S.....Ellsworth

### Kentucky

Forcht, Martin L. Jr.....Louisville
Miller, Walter B.....Creelsboro
Moore, James E.....Ashland
Oldham, William E.....Louisville
Sanders, Grover B.....Louisville
Sturgis, Donald G.....Louisville
Trawick, John D. Jr.....Louisville

### Louisiana

Aswell, Charles J. Jr.....Ville Platte
Gibson, Joseph A.....Baton Rouge
Joubert, Edward J.....New Orleans
Miller, George M.....Plaquemine
Menville, John G.....New Orleans
Wolf, Horace L.....New Orleans

### Maine

Soule, Edward H.....Portland

### Maryland

Bloom, Harry E.....Baltimore
Hyde, Robert A.....Baltimore
Inloes, Benjamin H. Jr.....Baltimore
Kreis, George J. Jr.....Baltimore
Maxwell, George A. Jr.....Severna Park
Pembroke, Richard H. Jr.....Park Hall
Scher, Isadore.....Baltimore
Stewart, Roy A.....Baltimore
Woodson, Charles E. Jr.....Bethesda

### Massachusetts

Agnew, John R.....Springfield
Baker, William J.....Cambridge
Bartlett, Stephen R. Jr.....Hingham
Bonzey, Charles M. Jr.....Jamaica Plain
Brown, Arthur K.....Haverhill
Coffin, Whitman K.....Boston
Crehan, Elmer L.....Roxbury

### Massachusetts—Continued

Dean, Michael A.....Millville
Djeri, Charles.....Quincy
Gras, Alfred E.....Cambridge
Guyton, Arthur C.....Boston
Hayden, Thomas H.....Lee
Keedy, David M.....Walpole
Levreault, Gerald V.....Springfield
Meadows, Edmund C.....Boston
O'Toole, John B. Jr.....New Bedford
Smith, Warren F.....Topsfield
Stone, Edward S.....Newton Center

### Michigan

Cook, J. Maxwell.....Alma
Danforth, James C. Jr.....Detroit
Fritz, George E.....Birmingham
Hayes, Mark A.....Bay City
House, Glenn W. Jr.....Grand Rapids
Levine, Sydney S.....Detroit
Mathieson, Don R.....Detroit
Norris, William W.....Portland
Peabody, Charles W.....Grosse Pte.
Pleune, Frederick G.....Grand Rapids
Prisbe, Edward J.....Dearborn
Rice, Meshel.....Detroit
Sanderson, Joseph L.....Detroit
Sprinkle, Charles L. Jr.....Lansing
Stewart, Maitland N. Jr.....Jackson

### Minnesota

Aldrich, Robert A.....Rochester
Burns, Floyd M.....Milan
Garske, George L.....Minneapolis
Heskett, Robert G.....Minneapolis
Miller, James R.....Rochester
Paulson, John A.....Rochester
Peterson, Joel L. E.....St. Paul
Poore, Thomas N.....Rochester
Stone, Norman F.....Minneapolis

### Mississippi

Bass, Ross F.....Hattiesburg
Friday, William C.....Tremont
Swartzfager, James H. Jr...State College

### Missouri

Aull, Keith.....Kansas City
Beecher, Sheldon B.....Rosendale
Gentry, Merritt L.....Springfield
Scheer, George E.....St. Louis

### Montana

Whalen, John T.....Missoula

### Nebraska

Babb, Malcolm C.....Lincoln
Fenstermacher, Robert C.....Wahoo
Frank, Carl L.....Omaha
Goetowski, Paul.....Omaha
Hildebrand, Howard H.....York
Kelley, Donald T.....Omaha
McMahon, Francis H.....Omaha

### Nevada

Roberts, John C. Jr.....Boulder City

### New Jersey

Barrett, James W.....East Orange
Braley, Alson E.....Tenafly
Brown, Kenneth B.....Bloomfield
Burchell, Frank H.....Paterson
Cole, Benjamin E. Jr....Mountain Lakes
Cornwell, Robert A.....Ocean City
Draesel, Stradford T.....North Bergen
Flanagan, James F.....Newark
Howard, James W.....Montclair
Orton, Stuart.....Rahway
Schleicher, John W.....Verona
Westlake, Robert E.....Ridgefield Park
Williams, David P. Jr.....Boonton

### New York

Ames, Richard C.....Roxbury
Borelli, Louis R.....Binghamton
Capalbo, John L.....Brooklyn
Cummings, Joseph L.....Poughkeepsie
Dickinson, Melville D. Jr.....Geneva
Eil, Harry M.....Bronx
Harris, Albert H.....Londonville
Knapp, Arthur A.....New York
Kornblee, Leonard V.....New York
Lagonegro, John H.....Elmira
Laycock, Charles F.....New York
Philson, Arthur D.....Pelham Manor
Rivers, Thomas M.....Forest Hills
Schoeneck, Ferdinand J.....Syracuse
Totah, Victor P.....Rochester
Villiaume, Lambert E.....Buffalo
Zorn, Eugene L.....Jamaica, L. I.

### North Carolina

Bell, Ralph M.....Mooresville
Ducker, Stuart R. Jr.....Stony Point
Erb, Norris S.....Badin
Gilliam, James S. Jr.....Elon College
Greenwood, James B. Jr.....Charlotte
Jarvis, Thomas R. Jr.....Winston-Salem
Metcalf, Lawrence E.....Asheville
Moore, William D.....Cary
Murray, William G.....Greensboro
Parker, Roy T.....Pinetops
Weeks, Kenneth D.....Rocky Mount

### Pennsylvania

Ambler, Ephraim R. Jr.....Jenkintown
Bove, Frank A.....Philadelphia
Cresson, Samuel L.....Swarthmore
Konzelmann, John B. H.....Philadelphia
Lentz, Sylvester E.....Lehighton
Marshall, Matthew Jr.....Pittsburgh
Pearson, Manuel M.....Bala-Cynwyd
Rannels, Herman W.....Lancaster
Szczepaniak, John P.....Philadelphia
Talbot, Timothy R. Jr.....Bala-Cynwyd
Weakley, Virgil W.....Philadelphia
Weigel, Joseph H.....Monaca

### Tennessee

Bellew, Laurence N.....Memphis
Hamel, Herbert A.....Memphis
Payne, Woodrow W.....Memphis
Thomas, Gordon C. G.....Oak Ridge

### Utah

Hansen, Wilford R.....Monroe
McKay, Edward R.....Salt Lake City
Madsen, George J.....Mt. Pleasant
Whitaker, Blenn A.....Ogden

### Vermont

Crane, Renold M.....Woodstock
Stickney, Joseph C.....Rutland

### Washington

Ballard, Jack D.....Seattle
Ferguson, Albert B. Jr.....Canton
Holmes, William W.....Seattle
Korvell, John C.....Seattle
Meyer, Edward R.....Olympia
Snyder, John E.....Seattle

### Wisconsin

Ambrose, Stephen H.....Whitewater
Bellville, Titus P.....Milwaukee
Brusky, Symphorian F.....Milwaukee
Eckstram, Eugene E.....Madison
Hering, George V.....Shell Lake
Homstad, Joseph E.....Cashton
Lococco, Thomas N.....Milwaukee
O'Brien, Paul T.....Menasha
Ramlow, Leonard W.....Wauwatosa
Thomas, William O. Jr.....Clinton

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# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

## CALIFORNIA

**Changes in Health Personnel.**—Dr. William E. Turner, San Jose, has been named health officer of Santa Clara County, succeeding Dr. Cecil M. Burchfiel, San Jose, who will devote his entire time to private practice.——Dr. James D. Coulter has been chosen health officer of the newly incorporated city of Portola, Plumas County.

**Executive Secretary for San Diego County.**—Mr. Kenneth Young, San Diego, has been appointed executive secretary of the San Diego County Medical Society, effective early in September. Mr. Young was associated with an investment group, and served as branch manager in an oil company. He was in the intelligence division and when discharged was immediately reemployed as a civilian intelligence officer.

**Personal.**—William W. Greulich, Ph.D., professor of anatomy, Stanford University, and director of the Brush Foundation, Cleveland, will spend the autumn quarter in Australia and New Zealand visiting the universities and medical schools of those countries. He plans to return to the United States in late December.——Dr. Merle E. Cosand, formerly of Carbondale, Ill., has been named health officer of San Bernardino County to succeed Dr. Walter W. Fenton, San Bernardino, who retired July 1.

## CONNECTICUT

**Personal.**—Dr. Dale E. Scholz, formerly of Staten Island, N. Y., has been appointed full time health officer of Middletown, effective July 1, succeeding Dr. Mario L. Palmieri, who resigned some months ago to return to private practice but remained as acting health officer until his successor was appointed.——Dr. Albert W. Snoke, director of Grace-New Haven Community Hospital, New Haven, was on July 18 named professor of hospital administration at Yale University School of Medicine, New Haven.

**Public Relations Director.**—The Connecticut State Medical Society has named James G. Burch, New Haven, to be public relations director. Mr. Burch is a native of Connecticut, a graduate of the University of New Hampshire, was for several years a member of the news staff of the Hartford *Courant* and was lately discharged, after five years, from the Army of the United States as a lieutenant colonel of infantry. Throughout his army experience he has served as public relations officer in the United States and the European theater.

**Appointments in Public Health.**—Included among recent changes in the department of public health at Yale University School of Medicine, New Haven, are the following: Dr. William R. Willard, assistant professor of public health; Dr. Charles C. Wilson, professor of public health and education; M. Allen Pond, M.P.H., assistant professor of public health and chief of sanitation; Dr. Franz Goldmann, clinical professor, chief of medical care section, and Dr. Albert N. Snoke, professor of hospital administration. Other appointments at the medical school include Elizabeth P. Rice, M.S., appointed clinical professor of social aspects of medicine and director of medical social service, Grace-New Haven Hospital, Dr. Alan Foord, clinical instructor in pediatrics and public health and assistant director, Grace-New Haven Hospital, and Eleanor M. King, M.P.H., associate professor of public health nursing.

## GEORGIA

**Eugene Stead Goes to Duke.**—Dr .Eugene A. Stead Jr., who recently resigned as professor of medicine and dean of Emory University School of Medicine, Atlanta, has announced his acceptance of the professorship of medicine at Duke University School of Medicine, Durham, effective January 1. Dr. Stead, who graduated at Emory in 1932, has also been physician in chief of the Emory division of Grady Hospital since 1942.

## ILLINOIS

**Epidemic Diarrhea of the Newborn.**—Epidemic diarrhea of the newborn was the discussion at a conference in Springfield, August 27, under the auspices of the Illinois Department of Public Health. The outbreak of this frequently fatal disease among infants this year has been carefully studied, and the results of the study were presented to the meeting.

### Chicago

**Tuberculosis Meeting.**—Dr. Jay A. Myers, Minneapolis, will address a combined meeting of the Chicago Tuberculosis Society and the Illinois chapter of the American College of Chest Physicians, October 24, on "Early Tuberculosis." The meeting will be held at the Bismarck Hotel.

**Popular Lectures.**—The Museum of Science and Industry, in cooperation with the Illinois State Medical Society and the Chicago Medical Society, conducted the following popular lecture series in August:

Dr. W. W. Bauer, August 4, The Nation's Health is Good.
Dr. Edward A. Piszczek, August 11, Infantile Paralysis.
Dr. Robert S. Berghoff, August 18, Coronary Disease.
Dr. Herbert E. Schmitz, August 25, What We Are Doing About Cancer.

**Jean McArthur Resigns.** — On September 28 Jean McArthur will leave the service of the Illinois State Medical Society after being secretary of its educational committee for more than nineteen years. Miss McArthur, whose married name is Mrs. Harvey W. Dutton, is a member of the Illinois Woman's Press Association, the Chicago Publicity Club, the advisory committee of the Illinois Congress of Parents and Teachers and the executive committee of the Illinois division of the American Cancer Society.

**General Rogers Appointed Managing Director of Cancer Division.**—Brig. Gen. John A. Rogers, who has just retired from the regular Army Medical Corps after many years of service, has been appointed managing director of the Illinois division of the American Cancer Society, effective September 10. General Rogers served during World War II as chief surgeon of the First Army, organizing and directing all medical activities of the Normandy invasion and the campaign of the First Army through France, Belgium, Luxembourg and Germany.

## LOUISIANA

**Grant for Research.**—A grant of $35,000 for the purpose of studying the effect of climate on the circulatory system has been made to the Tulane University of Louisiana School of Medicine, New Orleans, by the Life Insurance Medical Research Fund. This research work will be directed by Dr. George E. Burch, associate professor of clinical and experimental medicine.

## MASSACHUSETTS

**Proposed Institute of Medical Science.**—The Massachusetts General Hospital, Boston, wants $2,000,000 to erect and endow a new building, to be known as the Massachusetts General Hospital Institute of Medical Science, according to the Boston *Globe*, August 2. The $2,000,000 will cover the building of the institute, which is to be placed somewhere within the grounds of the hospital and will provide endowment for the maintenance of the building. It is planned to consolidate into a single integrated unit within the new structure research laboratories now spread throughout the hospital, many of them operating in nooks and crannies more than a century old and never designed for the needs of modern science. Among the laboratories to be quartered in the new building are bacteriology and immunology, pathology, routine chemistry, routine biology, clinical pathology of Phillips House and Baker Memorial, medical photography and illustration, spinal fluid and allergy. Carried on simultaneously with the drive for the $2,000,000 will be a campaign to establish an endowment to provide personnel and equipment for the new institute.

## MICHIGAN

**New Health Officer for Lansing.**—Dr. Roelof Lanting, Gladwin, director of the Shiawassee County Health Department, has been appointed to a similar position for the Lansing department of health. He succeeds Dr. Floyd R. Town, who resigned after holding the position for four years.

**Personal.**—E. Lee Vincent, Ph.D., chairman of the department of mental growth, Merrill-Palmer School, Detroit, since 1925, has been named dean of the college of home economics at Cornell University, Ithaca.——Dr. Oscar W. McKenna, Flint, recently completed fifty years in the practice of medicine.

**Application of the Basic Sciences to Clinical Medicine.**—The University of Michigan Medical School, Ann Arbor, announces a review course for returning medical officers and civilian physicians. Application of the basic sciences to clinical medicine will be held October 7-November 30 and a course for practitioners reviewing opportunities of the greatest possible practical value to the physician in everyday practice, February 3-28. Additional information may be obtained from Dr. Howard H. Cummings, Chairman, Department of Postgraduate Medicine, University Hospital, Ann Arbor.

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## MISSISSIPPI

**Pediatric Demonstrations.**—Dr. Jerome A. Weaver, New Orleans, held a series of demonstrations on pediatric technics in twenty Mississippi counties during August. He also met with the staffs of county health departments to discuss with them new advances in child health.

**Scholarships Awarded Under Medical Education Program.**—On August 14 the Mississippi State Medical Education Board announced the names of seventeen recipients of scholarships awarded under the state's new program of assisting students in the study of medicine:

Jim C. Barnett Jr., Lumberton, who has finished first year of medicine at University of Mississippi.
Richard E. Caldwell, Baldwyn, who has finished first year of medicine at University of Mississippi.
Paul E. Goode, Meridian, who has completed one year at Tulane University Medical School and will continue there.
Louie Crum Henry, Batesville, accepted for first year at University of Mississippi.
Millard Jensen, Lucedale, accepted for September in junior class at Tulane.
Sam P. McClatchy, Red Banks, accepted at University of Mississippi School of Medicine for September 1946.
S. Jay McDuffie, Nettleton, who has finished first year of medicine at University of Mississippi.
William C. McQuinn, Greenwood, who has finished first year of medicine at University of Mississippi.
L. O. Murphy Jr., Laurel, in third year of medicine at University of Tennessee.
Marshall F. Nichols Jr., Biloxi, who has finished first year of medicine at Meharry Medical College, Nashville, Tenn.
William Francis Owens, Clarksdale, who has finished two years of medicine at Johns Hopkins University School of Medicine and will continue there.
Jefferson W. Paslay, Como, who has finished year at University of Mississippi School of Medicine and will continue there.
James Edward Safley, Drew, who will enter for third year of medicine at Tulane University School of Medicine in September.
Michael E. Shaheen, Senatobia, accepted at the University of Mississippi as Mississippi resident.
Marcus Elton Waring, Tylertown, who has finished second year of medicine at Tulane and will continue there.
Joe W. Wiggins, Cruger, accepted for first year at Johns Hopkins University School of Medicine.
James P. Wood, Clinton, accepted for September at Tulane.

This new project to make loans available to students preparing for medicine was discussed in THE JOURNAL, August 10, page 1231.

## MISSOURI

**Course in Forensic Medicine.**—The second annual medicolegal conference for physicians, lawyers, coroners and police will be held October 4-5 under the auspices of the Coroner's Office and the medicolegal department of St. Louis County and is being sponsored by the Washington University School of Medicine, St. Louis, as a course in forensic medicine through its division for postgraduate medical education. Speakers will include:

Stewart Flanagan, attorney, St. Louis, Legal Considerations Incident to the Performance of Autopsies by Coroners and Pathologists in Missouri.
Dr. Downey L. Harris, St. Louis, Unexpected Autopsy Revelations in Medicolegal Investigations.
Roy S. Pruitt, St. Louis, Important Medicolegal Aspects of the Sale and Use of Barbiturates.
Courtney Goodman, attorney, St. Louis, Coroner Proceedings in Relation to Workmen's Compensation Hearings.
Dr. Robert A. Moore, St. Louis, General Remarks.
Dr. Henry C. Allen, St. Louis, The Medicolegal Autopsy.
Sidney Kaye, St. Louis, The Collection and Preservation of Biologic Materials and General Procedure for Toxicologic Analysis.
Orville Richardson, attorney, and Dr. Herbert S. Breyfogle, St. Louis, Medicolegal Problems in Distinguishing Accident and Suicide.
Arnold J. Willmann, attorney and coroner, St. Louis, Legal Aspects of the Practice of Medicine in Missouri.

Speakers have not been announced for the following topics: the collection and preservation of firearms evidence, homicide investigation and legal considerations of blood alcohol analysis.

## MONTANA

**Edythe Hershey Resigns.**—Dr. Edythe C. Hershey, Helena, head of the state maternal and child health division and crippled children's service for the last eight years, has resigned to become regional medical consultant for the United States Children's Bureau with headquarters in Dallas, Texas.

## NEW JERSEY

**Deaths from Sleeping Powders.**—On August 8 the New Jersey State Board of Pharmacy banned refills of sleeping powders and similar potions by druggists without renewals of prescriptions. The action was taken, Percy H. Jackson, president of the board, said, according to the New York *Times*, August 9, because 29 persons died in New Jersey last year from poisoning caused by sleeping medicines. He said pharmacists were complying generally with regulations on renewals, but "a little confusion" had arisen over their right to make them without doctors' orders.

## NEW YORK

**Medical and Public Health Aspects of Rheumatic Fever.**—A course of seminars on the medical and public health aspects of rheumatic fever will be offered at St. Francis Sanatorium for Cardiac Children, Roslyn, L. I., September 27-November 29. Among those participating are:

Dr. Leo M. Taran, Roslyn, September 27, Problems in Management and Control of Rheumatic Disease in Children.
Dr. Abram L. Van Horn, Washington, D. C., October 4, The Role of the Federal Government in the Management and Control of Rheumatic Disease as a National Problem.
Dr. Edward S. Rogers, Albany, October 11, The Role of the State Department of Health in the Management and Control of Rheumatic Heart Disease.
Dr. David D. Rutstein, Albany, October 18, The Role of the American Heart Association in the Study, Management and Control of Rheumatic Heart Disease.
Dr. Helen F. Dunbar, New York City, November 1, The Psychosomatic Aspects of Rheumatic Fever and Rheumatic Heart Disease.
Miss Grace White, New York City, November 1, The Role of the Medical Social Worker in the Problem of Management and Control of Rheumatic Fever and Rheumatic Heart Disease.
Dr. Arthur C. DeGraff, New York City, November 8, The Clinical Aspects of Rheumatic Heart Disease in the Adult.
Dr. John B. Schwedel, New York City, November 15, The Diagnostic Value of Roentgenography and Fluoroscopy in the Diagnosis of Rheumatic Heart Disease.
Dr. Harold E. B. Pardee, New York City, November 22, Electrocardiographic Findings in Rheumatic Heart Disease.
Dr. Harry S. Mustard, New York City, November 29, The Public Health Aspects of Rheumatic Fever.

## New York City

**Annual Cash Award for Essay.**—The Merritt H. Cash prize, awarded annually by the Medical Society of the State of New York for the best original essay on a medical or surgical subject, went to Dr. Samuel J. Prigal. The essay, which will be published in one of the fall issues of the *New York State Journal of Medicine*, was entitled "Studies with Medicated Aerosols: The Use of the Lungs as a Portal for the Introduction of Therapeutic Agents for Systemic Effects."

**Dr. Mulholland Named Stewart Professor.**—Dr. John H. Mulholland has been named George David Stewart professor of surgery and chairman of the department at New York University College of Medicine to succeed Dr. Arthur M. Wright, who retired August 31, it was announced (THE JOURNAL, August 24, p. 1448). A member of the New York University faculty of medicine since 1928, Dr. Mulholland became professor of clinical surgery and director of the third surgical division of Bellevue Hospital in 1941 and professor of surgery on April 1. From 1938 to 1946 he was also assistant dean of the college.

**Memorial to Alumni Who Died in Service.**—As a memorial to the 20 graduates of the Long Island College of Medicine, Brooklyn, who lost their lives during World War II, alumni have pledged $350,000 for the laboratory unit of the college's new basic science building, the first to be erected at its proposed medical center (THE JOURNAL, March 16, p. 726). According to a release from the college of medicine almost 900 graduates of the Long Island College of Medicine saw active duty with the armed forces during the war, according to a survey recently completed by Dr. Joseph V. Cresci, alumni secretary of the institution. These men make up more than 27 per cent of the total number of living graduates. A majority of the doctors saw service with the army as commissioned officers. Six alumni achieved the rank of colonel, 15 became lieutenant colonels and 69 were majors. In the company grades 280 served as captains and 230 held the rank of lieutenant. The navy claimed 180 graduates. Included in this total were 3 captains, 5 commanders, 36 lieutenant commanders and 120 lieutenants. The Coast Guard and Marine Corps drew a total of 5, and 1 alumnus served with the Royal Canadian navy.

## OREGON

**William Allen Retires from Teaching.**—William Fitch Allen, Ph.D., for thirty years professor and head of the department of Anatomy, University of Oregon Medical School, Portland, retired from teaching July 1. Dr. Allen became a member of the school faculty in 1916.

**Health Council Formed.**—The Multnomah County Health Council was officially organized July 25, when representatives from fifteen participating groups elected officers and executive committee members and outlined plans for the future operation of the council. The project is under the auspices of the Multnomah County Medical Society. Dr. Blair Holcomb, Portland, was elected chairman of the council, which will "concern itself with any or all aspects of community health, . . . including education, coordination, investigation, planning and the making of recommendations with respect to those

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aspects of community health with which the council may become concerned." Mr. Gust Anderson, representative of the Portland Central Labor Council (A. F. of L.), was elected vice chairman. Election of a secretary was postponed until the next meeting. Four executive committee members elected (one from each category of membership) are O. T. Wherry, D.D.S., Portland District Dental Society; B. C. Dunham, Chamber of Commerce; Dr. Thomas L. Meador, Portland, city health officer, and Father Arthur J. Sullivan, Catholic School of Portland.

## RHODE ISLAND

**Changes in Bradley Home Staff.**—Donald B. Lindsley, Ph.D., who has directed the psychologic and electroencephalographic laboratory at the Emma Pendleton Bradley Home, East Providence, since 1938, has been appointed professor of psychology at Northwestern University, Evanston, Ill. Dr. Maurice W. Laufer, who served as resident physician at the Bradley Home in 1942, has been appointed clinical director, which includes responsibility for the electroencephalographic program. Dr. Eric C. Denhoff, who served a residency at the Bradley Home in 1941 and returned in recent months as assistant physician, has been appointed director of clinical laboratories. The home observed its fifteenth anniversary on April 8. It provided inpatient neuropsychiatric treatment for boys and girls up to 12 years of age. Preference is given to Rhode Island residents, but children are accepted from all parts of the country provided they are within the age range, are of normal intelligence and can presumably profit from what treatment is available. The Bradley Home also serves as a center for the training of professional personnel. Its third function is to sponsor scientific and clinical investigation and medical research.

## SOUTH CAROLINA

**Postgraduate Clinical Assembly.**—The eleventh Piedmont postgraduate clinical assembly will be held at the Girls' High School Auditorium, Anderson, September 17. Among the speakers will be:

Dr. James E. Scarborough Jr., Atlanta, Ga., Cancer of the Tongue and Floor of the Mouth.
Drs. Oscar L. Miller and Paul Kimmelstiel, Charlotte, N. C., Malignant Lesions of Bones.
Dr. Lucius C. Sanders, Memphis, Tenn., Cancer of Colon and Rectum.
Dr. George T. Pack, New York, Present Status and Promise in Cancer Research.
Dr. James C. McLeod, Florence, president of South Carolina Medical Association.

Officers of the assembly include Dr. Carroll J. Scurry, Greenwood, president, and Dr. Edmund W. Camp Jr., Anderson, secretary.

## WASHINGTON

**State Headquarters Moved.**—The central office of the Washington State Medical Association has been moved from 218 Cobb Building to 327 Cobb Building, Seattle. Mr. Ralph W. Neill is executive secretary of the state medical association.

**Personal.**—Dr. Walter C. Cameron, Tacoma, has been named editor of the *Bulletin* of the Pierce County Medical Society, succeeding Dr. Lewis A. Hopkins, Tacoma.——Dr. James E. Drake has retired as director of health and public schools of Spokane, a position he has held for twenty-nine years with the exception of two years' army service in World War II.

**Health, Labor and Industries Program.**—A new cooperative program between the state department of health and the department of labor and industries to better health and safety conditions for industrial workers has been functioning satisfactorily, according to Dr. Arthur L. Ringle, Seattle, state director of health. Dr. Lloyd M. Farner, head of the industrial and adult hygiene section of the state department of health, explained that the agreement was entered into because of overlapping responsibilities of the two departments, particularly in the field of occupational disease control. Under provisions of the cooperative program the state department of health is responsible for study and evaluation of industrial hygiene hazards, while the enforcement of compliance with recommendations is the responsibility of the department of labor and industries. The state department of health is now assisting them by providing professional opinion as to whether it is reasonable to suspect that individual cases may be of occupational origin, supplying occupational disease consultant services and providing factual information to panels of physicians selected to assist in judging contested cases. Dr. Ringle said that under the new program provision has been made for earlier reporting of occupational diseases, the details of the reporting system to be announced later. The cooperative program has been approved by the Washington State Medical Association as well as by representatives of industry and labor.

## GENERAL

**Friedenwald Medal Goes to Frank Lahey.**—The American Gastroenterological Association has announced Dr. Frank H. Lahey, Boston, as the 1946 recipient of the Friedenwald Medal. The medal was set up in the association by Dr. Julius Friedenwald and is being given to Dr. Lahey for his numerous contributions to the surgery of the digestive tract.

**Irving Brick Winner in Essay Contest.**—Capt. Irving B. Brick, M. C., A. U. S., won the 1946 cash prize award contest of the National Gastroenterological Association with his paper on "Radiation Effects on the Human Stomach: A Preliminary Report." The prize was a check for $100. Certificates of merit went to Drs. Frank L. Apperly, Richmond, Va.; William Nimeh, Mexico City, and Juan Nasio, Rosario, Argentina.

**Special Society Elections.**—At the annual meeting of the National Gastroenterological Association Dr. Anthony Bassler, New York, was elected president and Drs. Clarence J. Tidmarsh, Montreal, Canada; Harry M. Eberhard, Philadelphia; William W. Lermann, Pittsburgh, and Jose O. Bustos, Buenos Aires, vice presidents. Other officers include Dr. Roy Upham, New York, secretary-general, national council; Dr. Gustave R. Manning, New York, secretary, and Dr. Elihu Katz, New York, treasurer.

**Prize Contest for Physicians' Art Work.**—The $34,000 prize contest for physicians' art work on the subject of "Courage and Devotion Beyond the Call of Duty" will be judged at the Atlantic City centennial meeting of the American Medical Association, June 9-13, 1947. Art works on other subjects may also be submitted for the regular cups and medals. For information write Dr. Francis H. Redewill, Secretary, American Physicians Art Association, Flood Building, San Francisco, or the sponsor, Mead Johnson and Company, Evansville 21, Ind.

**Schenley Distilleries Begins Medical Program.**—With the appointment of Dr. Adolph G. Kammer, Chicago, as medical director of the Schenley Distilleries, with headquarters in New York, effective October 1, the company will launch a medical program throughout its many branches in the country. Dr. Kammer, who was once medical director of Inland Steel and recently medical director of the Carbide and Carbon division at Oakridge, Tenn., will launch and coordinate independent medical departments in the various branches of Schenley Distilleries.

**Noise Achievement Awards.**—The city of Chicago is the winner of the 1946 grand national award of the National Noise Abatement Council for outstanding achievement among cities of the United States in the national fight against unnecessary noise. Other awards include:

Group 1, cities over 500,000 population, New York.
Group 2, cities of 250,000 to 500,000 population, Memphis, Tenn.
Group 3, cities of 100,000 to 250,000 population, Salt Lake City.
Group 4, cities less than 10,000, Beverly Hills, Calif.

The National Noise Abatement Council has headquarters at 9 Rockefeller Plaza, New York 20.

**Squibb-Ciba Prizes.**—The Association for the Study of Internal Secretions has announced the winners of the Squibb and Ciba awards made annually for exceptional investigation in the field of endocrinology. The award furnished by E. R. Squibb and Sons was made to Carl G. Hartman, Ph.D., professor and head of the department of zoology and also head of the department of physiology, University of Illinois, Urbana, Ill., for his fundamental work on the physiology of reproduction and the endocrine factors in menstruation. The award for younger investigators made possible through the grant of Ciba Pharmaceutical Product, Inc., went to Martin M. Hoffman, Ph.D., lecturer in medicine, McGill University, Montreal, for his work on the metabolism of estrogens and progesterone and his observations on the excretion of cortin in the urine following trauma.

**Hospital Association Meeting.**—The forty-eighth convention of the American Hospital Association will be held in the Philadelphia Convention Hall, September 30-October 3. One prominent feature of the convention will be the report of the commission on hospital care, which is concluding two years of study and research of hospital facilities in the United States. Representatives of the public, industry, labor, agriculture, government and the professions will discuss the various aspects of the report at two general sessions. The remaining two general sessions will be concerned with staffing the hospital. On Wednesday the overall problem will be discussed and an analysis will be made of hospital personnel supply and salary trends, and relationships with the medical and nursing staffs and with employee organizations. The Thursday session will be concerned with current trends in nursing and will include educational responsi-

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bilities of hospitals, student nurse recruitment, surveying costs in schools of nursing, how to meet increased costs of nursing service and practical nursing in hospitals. Special sectional meetings have been arranged to consider particular problems and topics of timely interest to administrators, trustees, department heads and representatives of special types of hospitals.

**Narcotic Violations.**—The United States Bureau of Narcotics, Treasury Department, has announced the following:

Dr. Wyman W. Harden, St. Petersburg, Fla., probation revoked for violation of the federal narcotic law and sentenced on June 7 to a term of two years.

Dr. Samuel R. Davis, Pittsburgh, convicted of a narcotic violation and on June 4 sentenced to serve a term of one year and one day at the Federal Correctional Institution at Milan, Mich., and fined $1 and costs.

Dr. Elijah J. E. Evans, Kansas City, Mo., pleaded guilty in the U. S. Court at Kansas City, Mo., and on July 9 sentence was suspended and he was placed on probation for a period of three years.

Dr. John D. Latta, Jerusalem, Ohio, following his plea of guilty in the U. S. District Court at Columbus, Ohio, to a narcotic violation, has been sentenced to a term of two years in the penitentiary.

Dr. Stephen Alexander Peters Jr., Thomasville, Ga., following his plea of guilty in the U. S. District Court at Thomasville to a narcotic violation, has been sentenced to a term of eighteen months in the penitentiary.

Dr. Jessie Marvin Harris on July 19 was sentenced in the U. S. District Court at Oklahoma City to serve a term of one year and fined $1,500 and placed on probation for five years for violation of the Internal Revenue Code. The commitment was stayed until August 19.

**Prevalence of Poliomyelitis.**—Reports of cases of poliomyelitis for the periods indicated have been received from the division of public health methods, U. S. Public Health Service as follows:

| Division and State | Aug. 31, 1946 | Sept. 1, 1945 | Median, 1941-45 | Total to Aug. 31, 1946 | Total to Sept. 1, 1945 |
|---|---|---|---|---|---|
| New England States: | | | | | |
| Maine | 4 | 3 | 1 | 15 | 40 |
| New Hampshire | 7 | 3 | 2 | 83 | 18 |
| Vermont | 0 | 5 | 3 | 17 | 24 |
| Massachusetts | 18 | 32 | 21 | 81 | 181 |
| Rhode Island | 5 | 0 | 1 | 18 | 1 |
| Connecticut | 3 | 20 | 20 | 39 | 105 |
| Middle Atlantic States: | | | | | |
| New York | 89 | 138 | 69 | 544 | 1,908 |
| New Jersey | 21 | 96 | 29 | 128 | 536 |
| Pennsylvania | 14 | 61 | 61 | 123 | 307 |
| East North Central States: | | | | | |
| Ohio | 43 | 33 | 33 | 319 | 183 |
| Indiana | 27 | 22 | 7 | 134 | 92 |
| Illinois | 201 | 94 | 37 | 1,046 | 432 |
| Michigan | 87 | 13 | 18 | 400 | 74 |
| Wisconsin | 184 | 15 | 15 | 430 | 51 |
| West North Central States: | | | | | |
| Minnesota | 208 | 9 | 11 | 1,820 | 44 |
| Iowa | 24 | 31 | 7 | 278 | 79 |
| Missouri | 63 | 29 | 11 | 341 | 85 |
| North Dakota | 74 | 0 | 1 | 235 | 8 |
| South Dakota | 22 | 4 | 1 | 241 | 5 |
| Nebraska | 51 | 9 | 7 | 264 | 35 |
| Kansas | 48 | 15 | 8 | 461 | 51 |
| South Atlantic States: | | | | | |
| Delaware | 1 | 4 | 3 | 9 | 17 |
| Maryland | 10 | 3 | 3 | 49 | 58 |
| District of Columbia | 4 | 8 | 8 | 12 | 78 |
| Virginia | 8 | 32 | 5 | 68 | 213 |
| West Virginia | 5 | 1 | 2 | 42 | 33 |
| North Carolina | 6 | 10 | 10 | 67 | 81 |
| South Carolina | 0 | 12 | 4 | 18 | 141 |
| Georgia | 8 | 6 | 6 | 110 | 71 |
| Florida | 10 | 4 | 2 | 447 | 51 |
| East South Central States: | | | | | |
| Kentucky | 6 | 2 | 10 | 73 | 33 |
| Tennessee | 18 | 23 | 5 | 103 | 251 |
| Alabama | 24 | 2 | 2 | 312 | 111 |
| Mississippi | 20 | 3 | 3 | 206 | 38 |
| West South Central States: | | | | | |
| Arkansas | 23 | 4 | 3 | 216 | 27 |
| Louisiana | 16 | 7 | 1 | 245 | 49 |
| Oklahoma | 14 | 16 | 2 | 233 | 128 |
| Texas | 23 | 33 | 8 | *687 | 714 |
| Mountain States: | | | | | |
| Montana | 9 | 0 | 2 | 72 | 7 |
| Idaho | 2 | 3 | 1 | 12 | 6 |
| Wyoming | 14 | 2 | 0 | 75 | 7 |
| Colorado | 77 | 15 | 5 | 579 | 58 |
| New Mexico | 11 | 0 | 1 | 90 | 11 |
| Arizona | 7 | 1 | 1 | 74 | 9 |
| Utah | 11 | 34 | 3 | 55 | 121 |
| Nevada | 0 | 0 | 0 | 3 | 2 |
| Pacific States: | | | | | |
| Washington | 28 | 22 | 12 | 192 | 137 |
| Oregon | 15 | 5 | 5 | 74 | 21 |
| California | 218 | 33 | 12 | 1,091 | 324 |
| * Total | 1,781 | 917 | ... | * 12,431 | 6,156 |
| Median, 1941-1945 | ... | ... | 917 | 5,886 | |

* Corrected cumulative total.

## PHILIPPINE ISLANDS

**Society Resumes Publication of Journal.**—The *Journal of the Philippine Medical Association*, publication of which was interrupted by the war, was resumed with the January 1946 issue. According to an editorial in the January issue, "to escape from the sordid effect of the enemy's obnoxious propaganda and imposition the Philippine Medical Association deftly maneuvered and parried with the enemy to be out of its clutches: it suspended in January 1942 the publication of its official organ, the *Journal of the Philippine Medical Association*, to prevent its being used as a medium of propaganda."

## CANADA

**New Dean of Alberta.**—Dr. John J. Ower, professor of pathology, has been appointed dean of the University of Alberta Faculty of Medicine, Edmonton.

**The Gross Memorial Lecture.**—The ninth annual Louis Gross Memorial Lecture will be delivered under the auspices of the Montreal Clinical Society at the Jewish General Hospital, Montreal, October 23, by Dr. Roy R. Grinker, director of the Institute for Psychosomatic and Psychiatric Research and Training of the Michael Reese Hospital, Chicago. His subject will be "Psychiatric Objectives of Our Time."

## LATIN AMERICA

**Health Activities in Latin America.**—*Medicosocial Congress.*—The first Pan American Medicosocial Congress will meet in Havana, Cuba, December 3-7. This date was selected in honor of Carlos J. Finlay. There will be sections on pediatrics, neuropsychiatry, tropical medicine and parasitology, nutrition and social medicine.

*Society News.*—Drs. Hector Valle Pineda and Augusto Fernandez Conde were appointed president and secretary, respectively, of the Colegio Medico de la Habana of the Colegio Medical Nacional of Cuba.

*Personal.*—Dr. Eugene Kisch, Far Rockaway, N. Y., left the United States, July 25, to lecture on "Prevention of Tuberculosis" at the Departmento Nacional de Salubridad in Buenos Aires, Argentina. Dr. Kisch will also give two papers on "Postwar Tuberculosis" at the National Academy of Medicine in Rio de Janeiro and São Paulo.

*Meeting on Brucellosis.*—The Mexican Commission for the Study of Brucellosis announces that the fifth brucellosis meeting is to be held in Mexico City from October 28 to November 2. This meeting will be sponsored by the secretary of public health, the Mexican Society of Tropical Medicine and the Mexican Research Commission. Previous meetings have been local, but because of the increasing importance of this infection invitations have been sent to investigators in all American countries. Additional information may be obtained from Dr. M. Ruiz Castaneda, Mexico City.

## CORRECTION

**The Hiatts in Hospital Positions.**—Dr. Joseph S. Hiatt Jr., Durham, Statesville, N. C., has been appointed associate superintendent and associate medical director of the North Carolina Sanatorium, Sanatorium, N. C. THE JOURNAL, July 6, p. 850, reported that Dr. Hiatt had been appointed superintendent of the Hugh Chatham Memorial Hospital, Elkin, N. C., to succeed Charles C. Weaver, D.D. The latter position was taken over by Dr. Hiatt's father, Joseph S. Hiatt Sr., D.D., Statesville.

## Marriages

FRANK L. SIBERTS, Hampton, Iowa, to Miss Elizabeth Slee of West Des Moines, June 27.

DOMINIC F. ZITO to Miss Virginia Frances Waldron, both of Phoenix, Ariz., July 5.

PHILIP W. HURSH, Hibbing, Minn., to Miss Esther F. Sydnes of Minneapolis, June 7.

ROBERT S. ALCORN, Menard, Texas, to Miss Betty Jane Bauer of Cincinnati recently.

DAVID D. ROSENFELD to Miss Betty Kolko, both of Rochester, N. Y., June 13.

LEROY S. SAFIAN to Mrs. Renée M. Bonis, both of New York, June 15.

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# Deaths

**James Deacon Bruce** ✠ Ann Arbor, Mich.; born in Blackstock, Ont., Canada, Oct. 4, 1872; Detroit College of Medicine in 1896; since 1942 vice president emeritus at the University of Michigan Medical School, which he had joined in 1904 as assistant in internal medicine and where he had served as director of internal medicine, chairman of the division of health sciences, chairman of the division of extramural services, director of postgraduate medicine, vice president in charge of university relations, consultant to the university medical service and member of the executive committee; formerly chief of the medical service at the university hospital; served as a member of the medical advisory committee of the National Committee on Economic Security, medical advisory committee, division of medical sciences, National Research Council, National Commission on Graduate Medical Education, chairman, Associated State Committees on Postgraduate Medical Education, member of Michigan Tuberculosis Sanatorium Commission, Michigan Committee on Juvenile Delinquency and Michigan Adult Education Advisory Committee and president of the Michigan Council on Adult Education; served as a captain in the medical corps of the Canadian army and later as a major in the medical corps of the U. S. Army overseas during World War I; fellow of the American College of Physicians, serving at various times as its president, governor and regent; fellow of the American College of Surgeons; trustee of the Michigan Foundation for Medical and Health Education; died September 5, aged 73, of cerebral hemorrhage.

**Joseph Brown Cooke,** Cooperstown, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1891; born on March 24, 1868; at one time adjunct professor of obstetrics at the New York Polyclinic Medical School and Hospital in New York, where he had been on the staffs of the Misercordia Hospital and New York Maternity Hospital and others; a major in the medical corps of the U. S. Army during World War I; formerly supervisor of the New York district of the U. S. Public Health Service and executive officer of the Veterans Administrative Facility in New Haven, Conn.; fellow of the New York Obstetrical Society; author of "Manual of Obstetrical Technique," "A Nurse's Handbook of Obstetrics" and "The Baby—Before and After Arrival"; author of fiction, including a novel, a play and many short stories; died in the Perry Nursing Home June 22, aged 78, of gastric hemorrhage.

**Royal Whitman,** New York; Harvard Medical School, Boston, 1882; born in Portland, Maine, Oct. 24, 1857; past president of the American Orthopedic Association; fellow of the American College of Surgeons; honorary fellow of the Royal Society of Medicine of London and the Royal College of Surgeons of England; an associate of the French Academy of Surgery; formerly on the faculties of the Columbia University College of Physicians and Surgeons and the New York Polyclinic Medical School and Hospital; consulting surgeon, Hospital for Special Surgery; consulting orthopedic surgeon, St. John's Guild Seaside Hospital, New York Home for Destitute Crippled Children, Darrach Home for Crippled Children, St. Agnes Hospital in White Plains, N. Y., Shriners' Hospital for Crippled Children in Montreal, Que., and the American Hospital, Britain; died August 19, aged 88, of chronic bronchitis and emphysema.

**Mihran Boghos Parounagian** ✠ New York; University of the City of New York Medical Department, 1895; specialist certified by the American Board of Dermatology and Syphilology; formerly clinical professor of dermatology and syphilology at the New York University College of Medicine; formerly secretary of the Manhattan Dermatological Society; for many years on the staff of the Bellevue Hospital; consulting dermatologist at the Manhattan State Hospital in New York, St. Luke's Hospital in Newburgh, Tuxedo Memorial Hospital, Tuxedo Park, St. Francis Hospital in Poughkeepsie, Cornwall (N. Y.) Hospital, Bayonne (N. J.) Hospital and the Jersey City Hospital; died in Cornwall, N. Y., June 13, aged 72.

**Erle Bulla Craven Jr.,** Lexington, N. C.; Johns Hopkins University School of Medicine, Baltimore, 1929; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served as associate in medicine at the Duke University School of Medicine and on the staff of the Duke Hospital, in Durham, where he had been an intern and resident physician; on the staff of the Lexington Memorial Hospital; a major in the medical corps, Army of the United States, assigned to the 65th General Hospital, during World War II; died June 19, aged 40.

**Jerome Hartman,** Dayton, Ohio; Jefferson Medical College of Philadelphia, 1923; specialist certified by the American Board of Orthopedic Surgery; member of the American Academy of Orthopedic Surgeons and the American Medical Association; diplomate of the National Board of Medical Examiners; served as chief of the orthopedic staff of the Miami Valley Hospital and also on the staff of the Good Samaritan Hospital; served during World War I; an officer in the medical corps, U. S. Naval Reserve, during World War II; died June 29, aged 48, of myocardial infarction.

**Gaylord Crawford Hall** ✠ Louisville, Ky.; Hospital College of Medicine, Louisville, 1902; served as professor of diseases of the eye, ear, nose and throat at the University of Louisville School of Medicine; member of the American Academy of Ophthalmology and Otology; past president of the Louisville Eye, Ear and Nose Association; one of the founders of the League for the Hard of Hearing and the workshop at the Kentucky School for the Blind; on the staffs of the Kentucky Baptist Hospital and St. Anthony's Hospital, where he died June 16, aged 66.

**Charles Sumner Adams** ✠ Quincy, Mass.; Harvard Medical School, Boston, 1894; past president of the Norfolk District Medical Society; on the staff of the Quincy City Hospital, where he died June 13, aged 76, of carcinoma.

**Charles Lewis Allen** ✠ Los Angeles; University of Maryland School of Medicine, Baltimore, 1887; professor emeritus of clinical neuropsychiatry at the College of Medical Evangelists; an Affiliate Fellow of the American Medical Association; member of the American Psychiatric Association; at one time on the staff of the New Jersey State Hospital in Trenton, N. J.; died May 28, aged 85, of chronic myocarditis and arteriosclerosis.

**Ida Zimmerman Anderson-Davis,** Phoenixville, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1902; died in St. Joseph Hospital, Reading, April 16, aged 65, of diabetes mellitus, arteriosclerosis and cerebral hemorrhage.

**Moritz Bachrach,** South Bend, Ind.; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1914; died May 7, aged 57, of angina pectoris.

**Oscar Baert,** Grand Rapids, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1890; died June 23, aged 79, of uremia and arteriosclerosis.

**James Lambert Beatty,** New Market, Ind.; Miami Medical College, Cincinnati, 1881; vice president of the New Market State Bank; died May 13, aged 87, of cardiac insufficiency.

**Benjamin F. Black,** Holton, Mich.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1893; member of the American Medical Association; for many years president of the high school board and member of the district school board; died June 20, aged 82.

**Edward Walter Bouslough,** Cedar Falls, Iowa; Sioux City College of Medicine, 1900; died May 16, aged 71, of cerebral hemorrhage.

**Merle Jay Brickman,** Cleveland; Western Reserve University Medical Department, Cleveland, 1911; member of the American Medical Association; on the staffs of the Woman's, Glenville and Charity hospitals in Cleveland and the Huron Road Hospital in East Cleveland; died in the Lakeside Hospital June 26, aged 63, of cerebral hemorrhage.

**Louis Herbert Burlingham,** St. Louis; Johns Hopkins University School of Medicine, Baltimore, 1906; charter fellow of the American College of Hospital Administrators; past president of the American Hospital Association; for many years superintendent of the Barnes Hospital; died on Cape Cod, Mass., June 24, aged 65.

**William Wilkes Burns** ✠ Selma, Ala.; Tulane University of Louisiana School of Medicine, New Orleans, 1915; for many years affiliated with the Selma Baptist Hospital, where he died June 5, aged 55, of coronary thrombosis with chronic hypertension.

**Charles Sylvester Butler,** Binghamton, N. Y.; Albany Medical College, 1895; at one time represented Broome County in the New York State assembly; died in the City Hospital May 26, aged 76, of carcinoma of the bladder.

**Henry Todd Butler,** Union City, Tenn.; University of Louisville (Ky.) Medical Department, 1884; died June 12, aged 84.

**Ashby Clifford Byers,** Harrisonburg, Va.; University of Maryland School of Medicine, Baltimore, 1901; served as coroner and health officer of Harrisonburg and Rockingham County; chairman of the local school board; on the staff of the Rockingham Memorial Hospital, where he died June 13, aged 70, of bronchiectasis.

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**Rachel Hickey Carr,** Wilmette, Ill.; Woman's Medical College, Chicago, 1887; died in St. Francis Hospital, Evanston, August 14, aged 89, of myocarditis.

**Albert Patton Clark** ✦ Colonel, M. C., U. S. Army, retired, San Antonio, Texas; George Washington University School of Medicine, Washington, D. C., 1909; Army War College in 1922, Army Medical School in 1911 and School of Aviation Medicine in 1932; entered the medical corps of the U. S. Army in 1911; fellow of the American College of Surgeons; died July 6, aged 62, of coronary occlusion.

**William O'Keefe Copps** ✦ Seattle; Northwestern University Medical School, Chicago, 1909; also an attorney; served as medical criminologist for the city police department; died in the Columbus Hospital June 22, aged 61, of congestive heart disease.

**Louie Richard Crabtree,** Columbus, Ind.; University of Tennessee Medical Department, Nashville, 1910; member of the American Medical Association; city health officer; past president of the Bartholomew County Medical Society; served as health officer of Nashville and as coroner of Brown County; on the staff of the Bartholomew County Hospital; died in Nashville June 27, aged 57, of coronary thrombosis

**Samuel Herbert Culver** ✦ Jersey City, N. J.; Bellevue Hospital Medical College, New York, 1897; died in St. Francis Hospital April 23, aged 74, of arteriosclerotic heart disease and cardiovascular renal disease.

**James Terence Degan** ✦ Oak Park, Ill.; Chicago College of Medicine and Surgery, 1916; served during World War I; on the staffs of the Alexian Brothers and St. Anne's hospitals in Chicago and the West Suburban Hospital; died June 10, aged 55, of cerebral hemorrhage.

**Giuseppe De Leo,** New York; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1919; member of the American Medical Association; on the staff of the Columbus Hospital; died June 7, aged 56, of heart disease.

**Theodore Myron Deutsch,** Brooklyn; Long Island College of Medicine, Brooklyn, 1935; member of the American Medical Association; interned at the Israel-Zion Hospital; served as a captain in the medical corps, Army of the United States, during World War II; died June 2, aged 35, of coronary thrombosis.

**E. V. Dildy,** Nashville, Ark.; University of Tennessee Medical Department, Nashville, 1906; member of the American Medical Association; district surgeon for the Missouri Pacific Railroad; died June 6, aged 65, of coronary thrombosis.

**Daniel Louis Dozzi** ✦ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1932; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; served as instructor in medicine at the University of Pennsylvania Graduate School of Medicine; on the staff of the Chestnut Hill Hospital; died May 18, aged 39.

**Thomas Herbert Elliott,** Oak Hill, W. Va.; Kentucky School of Medicine, Louisville, 1896; died July 28, aged 76, following fracture of the hip and uremia.

**Mortimer E. Emrick,** Chicago; Northwestern University Medical School, Chicago, 1904; member of the American Medical Association; died July 6, aged 66, of coronary thrombosis, chronic myocarditis and hypertension.

**Jacob Martin Erman** ✦ Omaha; Chicago College of Medicine and Surgery, 1916; served during World War I; died June 4, aged 53, of coronary thrombosis.

**Maurice Edward Paine Fitzgerald,** Boston; Harvard Medical School, Boston, 1898; served on the staffs of the Boston City Hospital, Boston Dispensary, Massachusetts General Hospital and St. Mary's Lying-In Hospital; died in the Faulkner Hospital June 30, aged 70, of chronic and subacute cholecystitis, stenosis of the aortic valve and acute peritonitis.

**Don Cameron Fosselman,** Connellsville, Pa.; Jefferson Medical College of Philadelphia, 1915; member of the American Medical Association; served during World War I; died in the Jefferson Hospital, Philadelphia, April 5, aged 54, of pulmonary embolus.

**Haynes Jordan Freeland** ✦ Arvada, Colo.; Indiana University School of Medicine, Indianapolis, 1916; fellow of the American College of Surgeons; member of the staffs of St. Anthony and Presbyterian hospitals and an associate member of the staff of the Children's Hospital, all in Denver; died June 22, aged 55, of tuberculosis.

**Frank Joseph Gundry** ✦ Bakersfield, Calif.; Cooper Medical College, San Francisco, 1906; fellow of the American College of Surgeons; senior staff surgeon, Mercy Hospital; died in the Colonial Hospital, Rochester, Minn., June 18, aged 69, of complications following gastroenterostomy for duodenal ulcer.

**Lewis Turner Gooch,** Lawton, Okla.; Hospital College of Medicine, Louisville, 1896; member of the American Medical Association; died June 1, aged 74, of coronary thrombosis.

**John T. Grace,** Atlanta, Ga.; University of Georgia Medical Department, Augusta, 1888; died June 22, aged 89, of cardiovascular disease and hypertension.

**Met Kearn Guinan,** Dexter, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; served as trustee of the Dexter school board; died July 1, aged 80, of heart disease.

**Nathaniel George Hagler,** East St. Louis, Ill.; Chicago Medical School, 1933; interned at the Kansas City General Hospital in Kansas City, Mo.; died in St. Mary's Infirmary, St. Louis, June 12, aged 54, of tuberculous meningitis.

**Robert Milton Hedrick** ✦ Gary, Ind.; Meharry Medical College, Nashville, 1918; surgeon in chief and owner of St. John Hospital, where he died May 13, aged 56, of cerebral hemorrhage.

**George F. Holler,** Waynesboro, Va.; Atlanta College of Physicians and Surgeons, 1901; served during World War I; died June 16, aged 69.

**Walter Scott Holley,** Toledo, Ohio; Eclectic Medical College, Cincinnati, 1920; member of the American Medical Association; at one time health commissioner of Toledo; served on the local Selective Service Board number 13; on the staff of the Mercy Hospital; died June 25, aged 52, of angina pectoris.

**John Crafford Holman,** Franklin, Texas; Hospital College of Medicine, Louisville, 1896; member of the American Medical Association; past president and secretary of the Robertson County Medical Society; died in the Torbett Clinic and Hospital, Marlin, Texas, June 2, aged 77, of coronary occlusion.

**Clarence Leslie Horton,** Bay St. Louis, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1893; physician for the Louisville and Nashville Railroad for the New Orleans and Mobile division; on the staff of the Kings Daughters and Sons Hospital; died June 21, aged 79, as the result of a fall.

**John Franklin Hull,** Alhambra, Calif.; State University of Iowa College of Medicine, Iowa City, 1898; member of the American Medical Association; served during World War I; on the staffs of the Garfield Hospital, Monterey Park, and the Alhambra Hospital; died June 12, aged 70, of coronary thrombosis.

**Clyde Franklin Jones,** Shelby, N. C.; University of Louisville (Ky.) School of Medicine, 1927; died June 13, aged 44.

**Joseph Basc Lackey** ✦ Ripley, Tenn.; Vanderbilt University School of Medicine, Nashville, 1907; died in the Baptist Hospital, Memphis, June 24, aged 62, of coronary occlusion.

**William Wallace MacAlister** ✦ Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1899; fellow of the American College of Surgeons; for many years affiliated with the Paterson General Hospital and surgeon for the Erie Railroad; died June 22, aged 70, of arteriosclerotic heart disease.

**Carl Gordon McCay** ✦ Atlanta, Ga.; Atlanta College of Physicians and Surgeons, 1910; died in Decatur June 13, aged 59, of myocardial infarction.

**Hurdle Thomas McClain,** Knoxville, Tenn.; Tennessee Medical College, Knoxville, 1906; member of the American Medical Association; formerly city councilman and city school board member; died at the Mayo Clinic, Rochester, Minn., June 6, aged 67, of carcinoma of the prostate.

**John Butler McCook** ✦ Hartford, Conn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1894; fellow of the American College of Surgeons; served in the Spanish American War and with the American Red Cross during World War I; consulting surgeon, Hartford Hospital, died June 19, aged 78, of carcinoma of the bladder.

**Warren Encell McCrary** ✦ Lake City, Iowa; Northwestern University Medical School, Chicago, 1917; fellow of the American College of Surgeons; health officer; for many years surgeon for the Chicago and Northwestern Railroad; medical director of the McCrary Hospital, where he died June 25, aged 53, of coronary thrombosis.

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**Claude Vincent McMeen,** New Cumberland, Pa.; Johns Hopkins University School of Medicine, Baltimore, 1917; served during World War I; died in Harrisburg (Pa.) Hospital April 27, aged 56, of cerebral hemorrhage, arteriosclerotic heart disease and hypertension.

**Edward Benno Meisgeier,** Bergenfield, N. J.; Bellevue Hospital Medical College, New York, 1891; died in the Holy Name Hospital, Teaneck, June 29, aged 77, of coronary occlusion, prostatic hypertrophy and uremia.

**Abraham Mendelson,** Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1912; died June 19, aged 56, of coronary arteriosclerosis and coronary occlusion.

**Ernest Manning Mills** ✦ Legrand, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1890; died in Marshalltown June 9, aged 83, of myocarditis.

**Edwin D. S. Mullison,** Norristown, Pa.; Jefferson Medical College of Philadelphia, 1904; died June 24, aged 68, of chronic leukemia.

**William Spencer Needham,** Pekin, Ill.; University of Louisville Medical Department, 1912; member of the American Medical Association; served overseas during World War I; a member of the Selective Service Board during World War II; served as director of the Oak Knoll Sanatorium, Mackinaw; died June 5, aged 56.

**Samuel D. Nixon,** Chicago; Rush Medical College, Chicago, 1904; member of the American Medical Association; served during World War I; on the staff of the Englewood Hospital, where he died July 2, aged 74, of pulmonary embolism, hypertensive heart disease and prostatic hypertrophy.

**Charles D. Packard,** Rhinelander, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1893; served as city health officer; died June 1, aged 79, of heart disease.

**Paul George Papsdorf** ✦ Chicago; Chicago Medical School, 1922; also a dentist; died in the Little Company of Mary Hospital, Evergreen Park, June 21, aged 55.

**Alphonse Hubert Petit,** Ware, Mass.; College of Physicians and Surgeons, Baltimore, 1890; chairman of the school committee and associate medical examiner for the district; on the staff of the Mary Lane Hospital; died in St. Damase, Que., June 9, aged 77, of senile gangrene, arteriosclerosis and bronchopneumonia.

**Ninian B. Primm,** Deerfield, Mo.; Keokuk (Iowa) Medical College, College of Physicians and Surgeons, 1904; member of the American Medical Association; postmaster of Deerfield; died in Fort Scott, Kan., June 27, aged 69, of cerebral hemorrhage.

**William T. Ray,** Gould, Okla.; Eclectic Medical Institute, Cincinnati, 1892; member of the American Medical Association; formerly a member of the state board of medical examiners; died April 28, aged 85.

**Edwin Herman Rea,** Toronto, Ohio; University of Wooster Medical Department, Cleveland, 1896; died in Lisbon June 15, aged 79.

**James William Reason,** Hilliards, Ohio; Starling Medical College, Columbus, 1895; member of the American Medical Association; president of the Norwich Township School Board; vice president of the Merchants and Farmers Bank; served on the staff of the Starling-Loving University Hospital in Columbus; died in Columbus June 27, aged 76, of cerebral thrombosis.

**Harry Linwood Richardson,** St. Petersburg, Fla.; Medical College of Ohio, Cincinnati, 1895; formerly affiliated with the Veterans Administration in Washington, D. C.; died June 5, aged 73, of cerebral hemorrhage.

**Joseph H. Scharf,** St. Louis; Maryland Medical College, Baltimore, 1900; died in the Jewish Hospital June 22, aged 69, of heart disease.

**Rudolph John Scharf** ✦ New York; Deutsche Universität Medizinische Fakultät, Prague, Czechoslovakia, 1922; found dead June 10, aged 49.

**Frank Frederick Schmidt,** Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1921; died in the Grant Hospital June 17, aged 50.

**Howard White Seager,** Balboa Island, Calif.; Rush Medical College, Chicago, 1896; served during the Spanish-American War, Philippine Insurrection and World War I; died in St. Joseph Hospital, Orange, June 14, aged 71, of ruptured aneurysm of the aorta.

**Elmer A. Sheets,** Yonkers, N. Y.; Denver College of Medicine, 1889; a trustee of St. John's Riverside Hospital for many years; died June 7, aged 84, of myocardial infarction, arteriosclerosis and coronary occlusion.

**Mathew A. Spangelberger** ✦ Denver; Denver and Gross College of Medicine, 1904; fellow of the American College of Physicians; twice president of St. Anthony's Hospital; on the staff of St. Joseph's Hospital and affiliated with the Mercy Hospital; died June 9, aged 66, of myocardial failure.

**Frederick Charles Spilsbury,** Detroit; Trinity Medical College, Toronto, Ont., Canada, 1891; died June 8, aged 82.

**Carl E. Stubenvoll,** Shawano, Wis.; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1892; member of the American Medical Association; on the staff of the Shawano Municipal Hospital; died June 11, aged 77.

**Stephen D. Swantek,** Grand Rapids, Mich.; Grand Rapids Medical College, 1902; died June 7, aged 67, of cerebral hemorrhage, hypostatic pneumonia and hypertension.

**George Gwin Taylor,** Springfield, Ill.; St. Louis College of Physicians and Surgeons, 1897; member of the American Medical Association; in July 1918 joined the department of public health as chief of the newly created social hygiene division, serving through 1921; in 1942 rejoined the department, becoming chief of the division of venereal disease control; formerly associated with the Chicago Health Department; died in the La Salle Hotel fire in Chicago June 5, aged 70.

**Frederick Henry Tebbe** ✦ Oakland, Calif.; Medical Department of the University of California, San Francisco, 1902; died June 27, aged 75, of coronary thrombosis.

**Gilbert Nathan Thompson,** Jesup, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1900; member of the American Medical Association; mayor of Jesup; served on the staff of St. Francis Hospital in Waterloo; died June 20, aged 75, of coronary thrombosis.

**David Walton Truscott** ✦ South Fork, Pa.; Jefferson Medical College of Philadelphia, 1924; president of the school board and director of the Union Deposit Bank; formerly an officer in the U. S. Navy; served in the Students Army Training Corps at the University of Pittsburgh during World War I; a member of the reserve staffs of the Conemaugh Valley Memorial and Mercy hospitals in Johnstown; died June 30, aged 45, of acute dilatation of the heart.

**Florence Edgar Voorhees** ✦ Newark, N. J.; New York Medical College and Hospital for Women, Homeopathic, New York, 1901; on the associate staffs of the East Orange (N. J.) General Hospital and Hospital of St. Barnabas and for Women and Children; on the medical staff of the Presbyterian Hospital; died July 20, aged 67, of Paget's disease.

**John Milton Walker** ✦ Dubuque, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1906; past president of the Dubuque County Medical Society; served during World War I; affiliated with the Finley and St. Joseph Mercy hospitals; physician in charge of St. Joseph Sanitarium; died in the State University Hospital, Iowa City, June 12, aged 69, of acute pulmonary edema, myocardial failure and carcinoma of the rectum.

**George Walter,** Mount Vernon, N. Y.; University of Maryland School of Medicine, Baltimore, 1910; served during World War I; died June 11, aged 66.

**Francis Vernon Ware,** Millville, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1896; served as medical inspector of the public schools of Millville and city physician; on the staff of the Millville Hospital, where he died June 13, aged 73, of cerebral hemorrhage.

**Henry Mayhew Wiggin,** Whitefield, N. H.; Boston University School of Medicine, 1895; on the staff of the Whitefield Hospital, where he died June 29, aged 77, of carcinoma.

**Frederic S. Wilson,** Detroit; Detroit College of Medicine and Surgery, 1915; on the staff of the Delray General Hospital; died in the Grace Hospital June 10, aged 54, of coronary thrombosis.

**Clifford Vane Winsett,** Quincy, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; recently became a member of the staff of the Illinois Soldiers' and Sailors' Home, where he was found dead June 15, aged 68, of cerebral hemorrhage.

**Ludwig Paul Otto Woelfert,** New York; Cornell University Medical College, New York, 1900; died in the University Heights Sanitarium July 3, aged 84, of chronic uremia and heart failure.

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# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Aug. 10, 1946.

### The Difficulties of Demobilized Specialists in Finding Employment

Medical officers who have been released from the fighting services, where they had been trained or were training as specialists, are finding difficulty in obtaining work in civilian life. The presidents of the Royal Colleges of Physicians, Surgeons, and Obstetricians and Gynecologists state in a joint letter to the medical press that not only is individual hardship involved but also these men may be driven to abandon their plans for specialization at a time when there is a great dearth of specialists in every branch of medicine and surgery. They fall into two groups. The first group consists of about 800 men who were being trained as consultants and have perhaps acted as graded specialists. They are from 28 to 33 years of age and either have taken or are preparing for higher qualifications. They are now acting as registrars at teaching or other hospitals, where they are paid $2,200 per annum plus $400 for maintenance. The writers propose that their term of office should be extended, if they so desire, until the national health bill comes into operation, provided the post-graduate deans who selected them are satisfied with their work.

The second group consists of older men, who perhaps have been qualified for ten years or more and some of whom are nearly 40 years of age. Nearly all have consultant qualifications. The writers ask the Ministry of Health to create for these men a number of more senior, salaried whole time appointments. Thus they will not compete for private practice with the unpaid assistant physicians and assistant surgeons on the staffs of the hospitals. Hospitals should be asked how many posts of this kind they need, and the appointments should be made by a small committee in each region. The term of office would end when the new service begins.

### The British Medical Journal

At the annual representative meeting of the British Medical Association the chairman of the Journal Committee, Dr. O. C. Carter, presented a satisfactory report. Never had the *British Medical Journal* been in such a sound position both scientifically and financially. During the whole war period it appeared regularly in spite of phenomenal difficulties. Twelve months after the war the *Journal* was still faced with the problem of acute shortage of paper, which with the increase of circulation became more and more severe, for the ration was based on prewar consumption. In 1939 the circulation was 42,000; the latest figure was 58,000. The standard of articles had been maintained at a high level. It had been said that some were not of immediate interest to general practitioners. But the function of the *Journal* was to see that all that was best in British medicine appeared between its covers. Remembering that the *Journal* had to cater for every type of practitioner and that to a large extent the standing and the reputation of the profession were sustained by the excellence of its contents, it would be generally agreed that it had ably fulfilled its role. Before the war little was heard of British medicine abroad, but now it was looked to for leadership. At the same time the needs of the busy practitioner had not been forgotten. "Any Questions?" was started for the man who had not a great deal of leisure for reading and has proved enormously popular. It answered current problems which confronted doctors all over the world.

The *Journal* was now embarking on new features which would absorb considerable expenditure. It had planned an abstracting service of the world's literature. This would fill the void created by the cessation of the German abstracting service. It was proposed to publish two journals, one for medicine and the other for surgery, obstetrics and gynecology. The committee had been fortunate in securing for editor of the Abstracts Dr. G. W. M. Findlay, who had for many years been connected with the scientific work of the Wellcome Research Institution. With great regret Dr. Carter announced the retirement of the editor of the *British Medical Journal*, Dr. N. G. Horner, who for eleven years had filled the position with distinction and ability. He would be succeeded by Dr. Hugh Clegg, who had been for many years deputy editor. It was largely due to his initiative that the various quarterly special journals had been established, and on his inspiration that the abstracting service had come into being. The representative for Paddington, Dr. G. de Swiet, urged that there should be more authoritative regular articles on recent advances in the treatment of disease. This proposal was accepted for the future, but the present difficulty of paper shortage was pointed out.

### Judge Criticizes Psychiatrists for Defense of Criminals

At a meeting of the Royal Medico-Psychological Association Scotland's chief criminal Judge, Lord Cooper, criticized psychiatrists because too many charges of murder were reduced by "exaggerated and unproved claims." In a recent period of fifteen years there had not been one sentence of death in Scotland. It was evident to him that in the last four or five years the thing had been overdone, with much harm to the cause of criminal reform. A section of the population were free to commit crime with limited liability or no liability at all, simply because a new science claimed to be able to put them in a certain category. Lord Cooper urged that in dealing with criminal cases psychiatrists should carefully verify the data on which mental diagnosis was made. He quoted 1 case in which a remarkable story had been accepted by the psychiatrists and later proved to have been an invention. He made the members sit up and move closer to the platform when he said "During the last fifteen years it has become a recognized point of procedure, when a serious crime cannot be defended on other grounds, to seek medical men who will provide that peculiar defense known as 'diminished responsibility.'" Lord Copper continued "You see the criminal in hospital, wrapped literally and metaphorically in a white sheet. We judges see him in the dock, but we see more than that. We judges and juries see the weapons he used and the blood stained clothing of his victim. We may see the victim, but more often we see the widow. It is not easy for the jury who have heard such a story to accept the suggestion that the perpetrator of some outrage, proved to the hilt, should be sent to a nursing home as if he had no responsibility at all for what he had done. But juries' attitudes to 'the diminished responsibility of a criminal' are changing." Lord Copper knew of at least 7 or 8 successive cases in which the psychiatric defense was unanimously rejected. The juryman feels that a criminal cannot be converted into a patient.

### The Production and Control of Penicillin

The production of penicillin in this country has been widely developed; $12,000,000 has been spent, of which $8,000,000 has been supplied by the government. The earlier method of surface culture has been largely replaced by deep culture. While the average monthly production in 1943 was 300 mega units, in 1944 it was 3,200, in 1945 it was 6,000 and in June of this year 300,000. In the House of Commons Mr. Leonard, speaking for the government, said that they would not allow uncontrolled distribution, which might result in the diversion to trivial uses, as occurred in America. Until commercial distribution had been in force for some months the Ministry of Supply would ensure that it was available in full quantity for the

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genuine medical user rather than for general needs. On the advice of the bodies concerned it had been decided to make it freely available to hospitals, doctors and dentists, and for sale to the general public by pharmacists only on prescription by a qualified practitioner.

For veterinary use there are sufficient supplies for approved research, but until the human demands are known the amount available for the treatment of dairy cows cannot be stated. Penicillin is particularly efficacious in the treatment of mastitis in cattle, and supplies have been made available for experiments on a large scale.

## PARIS

*(From Our Regular Correspondent)*

Aug. 8, 1946

### French Social Security Plan

The discussion of the "Social Security Plan" has, of late, become very brisk. Several points of friction with the medical profession have developed. With the new system of social insurance the insured will be refunded 80 per cent of the medical and pharmaceutical expenses, 100 per cent of the surgical expenses and 100 per cent of those incurred in connection with diseases of long duration. As the law of May 22, 1946 expands the social insurance system to all wage-earners and eventually to the whole population, a great many persons have an interest in these refunds. In order to provide for them it is necessary that the amount payable from the fund shall be the same as the fee charged by the doctors' syndicate. A commission with one third of its members representatives of the doctors' syndicate, one third representing the social security funds and one third representing the interested ministries has been designated to determine these amounts. A certain number of doctors' syndicates do not recognize the commission and would prefer that the tariff be fixed by the syndicate itself; others repudiate the agreements made between themselves and the funds notwithstanding the fact that the agreements signed with certain syndicates provide for an automatic revision of the tariff every time the cost of living increases by 20 per cent. As numerous syndicates have refused to enter an agreement even for a short period, they will not be involved.

The social security plan provides that after an illness lasts two months the medical consultant of the fund must visit the patient and specify the treatment to be followed. He is not allowed to intervene directly. While they can refer certain patients to a specialist, the doctors are demanding that the list of specialists be extensive, so that they can the better be enabled to make a choice.

In numerous places the creation of clinics and diagnostic centers is being considered. These institutions will be organized by the Ministry of Public Health and financed by the Social Security System. Numerous doctors point out that these institutions will represent an unfair competition.

The French plan does not contemplate changing the doctors into civil servants, a situation which has been considered in a number of foreign social security plans. Moreover, the French plan will be financed by contributions from the insured and by organizations financially independent from the state. Certain doctors contend that the social security system lowers the quality of medical care; others contend that the system will lower medical care for the poor, will place medicine at the disposal of the entire population and will permit the creation of a program of preventive and prophylactic medicine. By the concentration of important funds within the social security system, it will be possible to develop further scientific research and thus atone for the lack of it during the period when France was occupied by the Nazis.

In a recent issue, *Médecin français* proposes that the representation of the medical profession in the board of direction of the funds be increased and that justified criticism by doctors against the development of bureaucracy be taken into consideration. On the other hand, a superannuation fund must be created to provide for old and disabled doctors, the license tax must be suppressed and the scheduled tax must be reduced from 22 per cent to 16 per cent.

### Tenth Congress of Gynecology

The tenth Congress of Gynecology toook place in Lyons from May 27-29, Professor G. Cotte presiding. Numerous French, Dutch, British, Swiss and Portuguese gynecologists attended. G. Dubreuil reviewed recent microscopic studies of the ovary. R. Palmer, M. Moricand, J. A. Schockaert and J. Ferin discussed the mechanism and tests of ovulation in pathologic conditions. Schockaert and Ferin produced signs of follicle stimulation in 10 young women with amenorrhea and serious estrogen deficiency by the injection of 3,000 to 115,000 international units of serum gonadotropin of equine origin. A. Liesse reported that it is possible to cause the appearance of a progestative endometrium, a probable sign of ovulation in certain women, by bilateral infiltration of the stellate ganglion with 10 cc. of 1 per cent procaine hydrochloride. Netter infiltrates the superior cervical ganglion for the same purpose and believes that this phenomenon is the same as that observed by Pincus in doe rabbits inducing ovulation by sympathetic excitation. For the treatment of disorders of ovulation, J. Cotte proposes intravenous endocrine treatment with a completely purified hormone for lack of ovulation. For sterile women satisfactory results have been obtained by ablation of a unilateral adnexal lesion or superficial electrocoagulation of the neck of the uterus; for obstructed ovulation ablation of the cyst or follicular puncture has been performed.

The eleventh French Congress of Gynecology will be held in Algiers April 7-10, 1947.

## AUSTRALIA

*(From Our Regular Correspondent)*

July 20, 1946.

### Nationalized Medicine in Australia

In 1941 the National Health and Medical Research Council of Australia published an outline of a scheme for a salaried medical service. The object of this scheme was to make health and medical services available to all the people by means of salaried medical officers. This scheme was based on the provision of four types of consultation centers which would provide all the requirements of an efficient national medical service. The centers are of four classes: A, places having a doctor but no hospital, B, places having a hospital with a daily average of less than 40 inpatients, C, places having a hospital with a daily average of 40 to 50 inpatients, D, places having hospitals with a daily average of more than 50 inpatients, which are selected as district centers. With a salary range of £700 to £900 per annum, every doctor would be entitled to annual leave, sick leave on a credit basis according to length of service, study leave if the privilege was granted and superannuation and compulsory retirement at 65 years.

If sufficient population existed in a hospital district, a base hospital would be provided. In the metropolitan areas and in a few of the larger cities there should be, in addition to the central hospital, a ring of suburban consultation centers for primary consultations and casualty treatment, and a ring of small hospitals for minor cases. This plan appears to be the basis for action which has been taken over the last few years and will be taken in the future by the commonwealth government in providing a medical service for Australia.

The A class type of center is already in operation in some remote areas in Australia. The state government in Victoria last year reopened the old Melbourne hospital as a central hos-

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pital with a salaried medical staff. In Queensland for several years the honorary system has been abolished by the action of the state government in appointing full time and part time medical officers in hospitals. All medical treatment in public hospitals in Queensland has been free since January 1. The Hospital Benefits Act, whereby treatment costs up to 6 shillings per patient daily are paid to all public hospitals in Australia, has given virtually control of all hospitals to the commonwealth government.

CONSTITUTIONAL DIFFICULTIES

The only powers which the commonwealth possesses by its constitution in the field of health is under section 51 (IX), which deals with quarantine. It was largely for this reason that the High Court of Australia upset the Pharmaceutical Benefits Bill on Nov. 15, 1945. Australian states have the constitutional power in the field of health. In August 1944 the commonwealth government sought the approval of the Australian people, for increased powers, but the referendum was badly designed. The commonwealth asked for numerous powers in many fields, and the people tended to be frightened. There was no opportunity for the people to discriminate between desirable powers and otherwise. In September another referendum will be held in which the people will be asked to express their preference "Yes or No" under three headings: employment, marketing and social services. It is expected that a request for power to pay sickness and unemployment benefits and pensions will be bracketed with the free medical and dental service under the heading of social services.

In a Gallup poll conducted in Australia during May this year 64 per cent of men and 60 per cent of women said that they would be voting "yes" to the social service question. Only 26 per cent had made up their minds to vote "no," and the others were undecided. Electors who intended to vote Labor were 80 per cent in favor of "yes" for social services, but non-Labor electors were 50-50.

RECENT DEVELOPMENTS

In a conference of commonwealth and state health ministers held at Canberra, May 6, a proposal by the minister of health for the commonwealth (Senator Fraser) resulted in a decision to appoint a commonwealth committee and one in each state to report on the practical aspects of a national medical service based on the following principles:

1. Every person in Australia shall be entitled to medical attention without regard to his economic status and without any direct charge for the service.

2. This service shall include a full range of medical attention, including all modern diagnostic and specialist services.

3. All necessary medical centers shall be established and maintained by the commonwealth, but existing hospitals shall be used wherever possible. The commonwealth will accept the financial responsibility for the medical staff. The committee shall, if it considers it necessary, recommend that the state act on behalf of the commonwealth.

4. The commonwealth, under full powers, will pass the necessary legislation.

The commonwealth committee will comprise three commonwealth representatives and nominees of each state. The state committees will comprise a commonwealth representative, the chief state health officer, a representative of the state government and—if the British Medical Association will cooperate—a representative of the British Medical Association. The state committees will recommend to commonwealth and state health ministers the location and type of centers, specialists required for each center, localities in which flying doctor services and mobile units are desirable, the nature of existing and desirable pathologic, radiologic and specialist services in each country town and localities in which one man medical practices should be established. Medical centers would be built by the commonwealth in metropolitan areas and country towns. Some medical centers would be in association with hospitals. The ultimate objective of the scheme would be the establishment of a complete medical service available free to every person in Australia. Senator Fraser said the commonwealth government was most anxious to have the cooperation of the British Medical Association in carrying out this service. Any proposals by the medical profession to facilitate the introduction of the scheme or to improve it would be carefully examined. It will be seen, therefore, that the present proposals will largely fill in the gaps in the salaried medical service drawn up in 1941.

REACTIONS OF MEDICAL PROFESSION

Medical practitioners in Australia are antagonistic to the principle of a salaried medical service. Medical men are anxious to preserve as individuals their freedom, personal responsibility and initiative. They are prepared to cooperate in a plan for medical services fully available to every one but based on private practice with access to adequate hospital accommodation and backed by freely available laboratory and technical resources. They are prepared to cooperate in the investigation and removal of economic barriers which hinder access by a proportion of the community to the existing medical services. They are opposed to any form of organization under any authoritative body which has statutory or other powers to impair the private contractual relationship between doctor and patient, either by means of regulation having the force of law or through control of the money constituting either the whole or the greater part of doctors' income. The profession opposes its nationalization. It is particularly disturbed at the possibility of control by laymen.

## BRAZIL

*(From Our Regular Correspondent)*

RIO DE JANEIRO, Aug. 2, 1946.

### Experimental Generalized Chromoblastomycosis

Drs. A. Area Leão, Milton T. de Mello and A. Cury have described their investigation on experimental generalized chromoblastomycosis in mice, performed at the Division of Mycology of the Oswaldo Cruz Institute of Rio de Janeiro, with original results that emphasize some important points for the knowledge of the disease in man. Although natural chromoblastomycosis is considered a strictly localized infection, there are several reports of metastases in the literature (Lane, Levy and Black-Schaffer, Carrion and Koppisch). In experimental chromoblastomycosis a few incomplete investigations by Brazilian (O. Pereira) and Argentine (S. Mazza, F. L. Niño) workers have demonstrated the possibility of the formation of distant lesions. Using white mice injected intraperitoneally, Area Leão and his collaborators succeeded in producing typical chromoblastomycotic lesions in the liver, spleen and parietal peritoneum, with the presence of elements permitting the recovery of the parasites by culture. Moreover, in 3 mice they obtained a generalized infection which permitted the recovery of the parasites from several lesions, a fact never previously reported. The possibility of generalization of the parasites has been shown, even when the fungus has not been directly introduced into the blood stream. The possibility of the propagation of the parasites from any point of inoculation and the production of lesions of variable severity in distant organs explain the report of cases of rare localization of chromoblastomycosis in man without trauma which should act as an entrance for the causative agent of the infection. The practical importance of the experimental work of Area Leão and his collaborators is that there are saprophytic fungi living on plants without morphologic difference from others that are causative agents of chromoblastomycosis and that several of them are able to produce in laboratory animals lesions identical to those caused by fungi considered pathogenic.

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# Correspondence

## GOUT—A STILL FORGOTTEN DISEASE

*To the Editor:*—Recently I took care of a physician's practice for a month, during which time an incident took place which was so timely, in view of the article in THE JOURNAL, June 1, that it seems worth reporting; also it shows the value of that type of literature to the general practitioner.

An otherwise healthy man in his middle forties limped into the office. He stated that he came because of a more or less generalized itching of the body, which he thought could be from poison oak, and foot trouble which might be from an arch condition. He had been working around his yard, and though poison oak was in the vicinity he had resided long in the same area and believed that he was not sensitive to it.

The cause of the foot condition was not clear. There was no evidence of flat feet. Between his toes there was much scaling of skin which suggested epidermophytosis, and in mentioning the common name athletes' foot he said he had been treating for that. The back of the right foot being swollen, I reasoned a possible infection, the source being through the broken skin between the toes. As there was no evidence of tenderness in the lymphatic glands, I also considered a foot strain from the work he had been doing.

For treatment I suggested permanganate soaks for the feet, and as other cases of poison oak were common in the district I gave the injection treatment used in such cases.

The next day the general condition of his skin was better. His foot was worse. I reviewed the history, bringing out that he had an attack of rheumatism at about the age of 10. In view of that I prescribed sodium salicylate. The injection treatment for the skin was continued.

The day following, his wife came to the office door to see if I was in, before helping her husband out of the car, as he was now on crutches. I jokingly remarked to her "Maybe he has the gout," to which she, laughing, replied "That's what I've been telling him."

At that moment it popped into my head that I had read in THE JOURNAL "Gout—A Still Forgotten Disease" by McCracken, Owens and Joseph H. Pratt.

Rereading that article and reviewing the history, I felt sure my patient had the gout. Subsequent developments and the course assured me that this was the diagnosis, and I told him that the expression used was a "fit" of gout.

The other joints that in turn developed swelling and pain were the right ankle, left metatarsal joint, large toe area, left ankle, moderate symptoms from the knees and finally some from the left hand, particularly the index finger. His temperature varied from 99 to 103 F., reaching the highest point on only one occasion. He did not feel particularly ill and his pulse did not become even as relatively rapid as one would expect from his fever. As the swelling subsided there was much scaling of the skin over the joints that had been affected. I found no tophi, though there was an unproved tophus-like nodule on the helix of the right ear. The duration of the whole course was about two weeks. As to the diagnosis of a poison oak dermatitis, I decided that the generalized itching was associated with the gout.

The response to colchicine, two courses, while not dramatic, was satisfactory. Cinchophen was used when diarrhea developed from the colchicine. There was freedom from all symptoms at the end of two weeks. He lost 16 pounds under the restricted diet, but as he was a heavy man the loss will no doubt have other benefits.

Inquiry into his habits showed that he did not use alcoholics. As for excessive food, particularly meat, he had opportunity at various barbecues to eat more of such food than usual, but in these times of restricted supply that could not have been constantly excessive.

Though I have been in "medicine" for forty years, twenty-three of which were in active general practice and the last seventeen years in school health work, I have felt that I have "kept up"; but I would have missed the diagnosis in this instance had I not remembered reading that article.

To gain further information to aid me in this case, I found an excellent article in Nelson's Loose Leaf Living Medicine. It covered the subject so well that I read and reread it several days before noting the author's name. It was Joseph H. Pratt!

LEE W. PAUL, M.D., Los Angeles.

## INTERSTATE QUARANTINE AGAINST POLIOMYELITIS

*To the Editor:*—The editorial in THE JOURNAL, July 27, regarding interstate quarantine against poliomyelitis did not appear to me to consider adequately the information available at the present time regarding the mode of spread of that disease. The facts recently established were summarized in another editorial in THE JOURNAL, January 19. The statement was made in that summary that "a large body of facts is now available, however, indicating that the disease is passed from person to person by respiratory and oral transfer; these facts have been considerably reinforced by two recent studies of epidemics observed in Chicago and Buffalo."

I cannot reconcile your comparison of the present status of our knowledge of poliomyelitis to that of the days of "shot-gun quarantine against yellow fever." Admittedly, our information is inadequate, but it has at least advanced beyond total ignorance. A blanket condemnation of interstate quarantine reveals a lack of knowledge of the specific objectives which this procedure, as established by North Carolina and, presumably, by the other southern states concerned, was intended to achieve. Florida children are known to attend summer camps and resort areas in the Southern mountains in large numbers. Since children from various other states are also present in these resorts, an unusual opportunity would have existed in June for widespread contact between children from nonepidemic areas and those from infected areas.

The increase in incidence of the disease in Florida was not confined to a "few cities in southern Florida." Of that state's sixty-seven counties, forty-one had reported 1 or more cases for the year through August 6. The Buffalo studies emphasized the widespread nature of an "epidemic" of poliomyelitis and the high incidence in the population in such an area of healthy carriers as well as cases of the nonparalytic form of the disease. With the period of infectivity by the respiratory route in the average case lasting from approximately three days before to three or four days after onset, the two week quarantine period required of all children entering the state from an infected area was a logical procedure to interrupt spread of the disease by that route.

The widespread cooperation of resort owners and operators, the majority of whom were contacted individually before their establishments were opened, has without doubt made the execution of the quarantine reasonably effective.

Control of transients was not attempted, and adults were excluded from the restrictions. Therefore, avoidance of all risk or even a major part of all risk of spread of the disease from infected persons was not intended; however, in the group of children primarily concerned, reduction in the risk by establishment of the quarantine appears to me to have been a logical procedure.

CARL V. REYNOLDS, M.D., Raleigh, N. C.
Secretary and State Health Officer.

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## DOSAGE OF ANTIMALARIAL DRUGS

*To the Editor:*—The article entitled "Chloroquine for Treatment of Acute Attacks of Vivax Malaria" by Most and his associates in the July 20 issue of THE JOURNAL brings up a point which has given us some concern.

During the research period the investigators cooperating with the Board for the Coordination of Malarial Studies of the National Research Council were instructed by the board to calculate dosages of Aralen (Chloroquine) in terms of the amount of base contained, regardless of the salt used. This was entirely logical, since the investigators were engaged in comparative studies on a large number of compounds and their chief concern was to obtain information on the active principles of the drugs involved.

When the compounds were carried over into clinical research this practice was continued, and in the case of Aralen, although the diphosphate was used, dosages continued to be expressed in terms of the active principle or base.

Dr. Most's article and several others which have appeared recently express dosages in terms of the base although Aralen diphosphate was actually used. Since in our commercial literature the content of the tablets and the dosages must be expressed in terms of the salt present to comply with regulations of the Council on Pharmacy and Chemistry and the Food and Drug Administration, we anticipate that confusion may arise in the minds of physicians regarding dosage.

One Gm. of Aralen base is the approximate equivalent of 1.6 Gm. of Aralen diphosphate. In the Most article recommendations are made for a total dose of 1.5 Gm. Despite the fact that our labels contain the statement "Each tablet contains 0.25 gram Aralen diphosphate equivalent to 0.15 gram Aralen base," we are afraid that physicians may not always keep this difference in mind and that some patients will actually receive only 0.94 Gm. of the active principle instead of 1.5 Gm.

WINTHROP CHEMICAL COMPANY, INC., New York.
J. B. RICE, M.D., Director of Medical Research.

## USE OF ULTRAVIOLET LIGHT IN DETECTION OF SKIN CHANGES

*To the Editor:*—The articles on Wood's light fluorescence of the nails from quinacrine hydrochloride (atabrine) medication (THE JOURNAL, July 6, pages 808 and 809) impel me to call attention to a little known mode of production of these zones of radiation. A conventional appearing incandescent bulb has become available. It operates on any house current through the usual outlet. The bulb is Westinghouse Purple X, 250 watt, a 21 screw light socket. On either direct or alternating current this bulb produces ultraviolet radiation and some visible violet. It permits observation of fluorescence of the human skin, hair and nails in a darkened room or closet. The atabrine fluorescence is easily visible on the nails demarcated from the normal nail fluorescence.

The operating temperature of the bulb is high, equivalent to a photo flood lamp of the same wattage. The person operating the lamp and the patient must be protected. The handyman's wire cage or garage type cage is very good, particularly if equipped with a metal reflecting plate. The rubber covered handle is excellent and if equipped with a switch gives control. The bulb is rated at fifty hours on intermittent use.

The physician seeking a low cost fluorescent source will find this combination suitable for his needs. Its one great advantage over higher cost equipment is general availability on either direct or alternating current. Other advantages are that it can be easily carried from place to place, no time need be wasted waiting for build-up of lamp prior to first examination or between examinations, there is nothing to get out of order (always just when you need it) and it is one replaceable unit. Extra bulbs may be carried in stock as other electric light bulbs.

The lamp-metal cage assembly is of great help in mass screening of school children for detection of epidemic ringworm of the scalp. The greenish yellow fluorescence of the infested hair is unmistakable.

Incidentally, neither paper mentions the yellowish fluorescence of the palmar and plantar thickened keratin observed in patients.

HERMAN GOODMAN, M.D., New York.

## GYNEMETRICS: A TERM TO DESIGNATE OBSTETRICS AND GYNECOLOGY

*To the Editor:*—Recently J. Pou Orfila, writing in *Obstetricia y ginecologia latino-americanas* **2**:663 [Sept.] 1944, stated that obstetrics and gynecology should be combined as one specialty and designated by one word, namely gynecology. Orfila's plea for one word is not illogical, since the term obstetrics and gynecology is cumbersome.

The thought comes to mind that a new word like "gynemetrics" may be more suitable when referring to the art and science of obstetrics and gynecology. The derivation is gyne (woman), metra (uterus) and ic (pertaining to), all from the Greek.

An obstetrician and gynecologist could readily be designated as a "gynemetrician." A textbook of obstetrics and gynecology could be called a "Textbook of Gynemetrics." Greenhill's Year Book could be named the "Year Book of Gynemetrics." The gray journal could be named the "American Journal of Gynemetrics." Moreover, the terms "Ob" and "Gyn" might thereby be relegated to obscurity.

CARL T. JAVERT, M.D., New York.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### BOARDS OF MEDICAL EXAMINERS
### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Sept. 7, Page 46.

### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Part II.* Dec. 16-17. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia 2.

### EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written.* Various centers, Sept. 30. *Oral.* Boston, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Oral.* Cleveland, Dec. 5-7. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written.* Feb. 17. Final date for filing applications Nov. 1. Sec., Dr. William A. Werrell, 1 W. Main St., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* New Haven, Oct. 8-9. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OBSTETRICS & GYNECOLOGY: *Written. All Groups. Part I.* Various centers, Feb. 7. Final date for filing application is Nov. 1. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh 6.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: *Part II. Oral.* Chicago, January. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 1136 W. Sixth St., Los Angeles 14.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral.* Chicago, Oct. 8-12. Sec., Dr. D. M. Lierle, University Hospitals, Iowa City, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: New York, Dec. 16-17. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N.W., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

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# Bureau of Investigation

## CEASE AND DESIST ORDERS

### Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively within the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added powers. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1944 and 1945 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

**B. Paul's, Henry's, Luxe, Eau Sublime, Godefroy's, and Some Other Cosmetics.**—Gustave Goldstein, trading as Humania Hair Goods and Specialty Company, New York; complaint issued Nov. 24, 1944; order issued April 30, 1945. Order directed respondent to discontinue these misrepresentations: That B. Paul's Compound, a hair dye, is harmless; that Herolin Skin Cream is an effective treatment for superficial pimples or skin blemishes; that Henry's Super-Light Working Oil and Henry's Sulphur Lanolin Treatment for Hair and Scalp are competent treatments for dandruff or itchy scalp, or will relieve the latter condition except when caused by minor scalp irritations; that the Lanolin treatment is effective therefor or that Humania Dandruff Treatment will cure dandruff or prove competent for that condition. The order further prohibited the respondent from disseminating any advertisement which does not reveal the following facts: That Luxe Hair Coloring, Eau Sublime or Godefroy's Larieuse may cause skin irritations; that they should not be used for dyeing the eyelashes or eyebrows, lest they cause blindness; that they should not be employed, in any event, when there is any disease of, or eruptions on the skin or scalp, or until after a proper patch test has demonstrated that the user is not susceptible to the product; that B. Paul's Compound may cause skin irritation and should not be left on the skin or scalp for prolonged periods of time, should not be used when the skin is broken or where an eruption is present, and should not be permitted to come in contact with the eyes; that Apex Skin Bleach may cause irritations and should not be applied to an area on the skin larger than the face and neck at any one time; that frequent applications and use over excessive periods of time should be avoided and adequate rest periods between series of treatments observed; that the product should not be used on cut or broken skin and that in all cases a patch test should be made to determine whether the user is sensitive to it; and that Magic Shaving Powder may cause irritations of the skin and should not be used by those having tender skin or allowed to come in contact with the eyes, since to do so would cause extreme irritation. The order provided, however, that advertisements relating to the last-named preparations need contain only the statement "Caution: Use only as directed," if the instructions on the label carry a similar warning.

**Digitite and Chin-Ep.**—L. R. Kallman, trading as L. R. Kallman & Company, Chicago; complaint issued May 22, 1943; order issued April 17, 1945. Order directed Kallman to cease representing that Chin-Ep, formerly known as Chin-Up, is effective in preventing, eliminating or tightening flabbiness along the throat line or will cause a person to have or to retain a youthful throat line or make loose or flabby skin firmer. Further, it directed the respondent to cease representing that Digitite will tighten the skin of the hands, cause it to be velvety smooth or impart to the hands a youthful appearance, or that either preparation will make the skin firmer, in excess of possibly affording temporary firmness to the outer layer. The findings of the Commission were that these products may, by means of their astringent action, give the user a feeling of skin tightness, but will not actually tighten the loose skin or give it an appearance of smoothness. Further findings were that continued use of these preparations may harden the outer layer of the skin and may or may not cause it to be firmer, but that such continued use may result in skin irritations and roughness.

**Giljan Laxative Compound.**—Giljan Medicine Company, Inc., Cincinnati; complaint issued Sept. 16, 1944; order issued May 14, 1945. Order directed the concern and its officers, Henry S. Dunlap, George Remus and Blanche Watson, to cease disseminating advertisements containing the following misrepresentations: That the product is a natural medicine, either in the sense that its ingredients are of natural origin or that it acts in a natural manner on the system; that the formula is new or scientific, or that its ingredients, other than cascara bark, senna leaves, aloes and mandrake root, have any therapeutic value; that it is a cure for, or has any medicinal value in the treatment of stomach trouble in its various forms, weak kidneys, rheumatism or neuritis or the pains associated therewith, or sour stomach, liver and kidney ailments, or a general run-down condition; that it has any beneficial effect on the functioning of the kidneys, liver or stomach, will relieve a lazy or drowsy feeling or restore energy; that it has any value in the treatment of headaches, dizziness or a tired feeling beyond affording temporary relief when such conditions are due to constipation, or that it is effective in treating constipation in excess of affording temporary relief because of its laxative qualities; that it is an effective diuretic, will flush poisons and clear old bile from the system, relieve bladder irritation, strengthen the nerves, improve the appetite or digestion, relieve digestive disorders or regulate the bowels; that it has any therapeutic value in excess of that of a laxative, or that 87 per cent or any specific number of persons has been benefited through its use. The order, which was issued also against the Kay Advertising Company, Cincinnati, further directed the respondents to discontinue any advertisement which did not reveal that the preparation should not be used in the presence of nausea, abdominal pains or other symptoms of appendicitis, provided, however, that it would be sufficient for the advertisement to state, "Caution: Use only as directed," if the same warning appeared on the label. Giljan and its promoters were discussed at some length in this department of The Journal, Oct. 7, 1944, page 384.

**Hillyard Spectacle Scheme.**—Francis R. Hillyard, Sr., Washington, D. C.; complaint issued June 29, 1943; order issued April 10, 1945. Order directed Hillyard, who operates an optical store and trades as Dr. F. R. Hillyard & Son, and his sons, Bernard B., Francis R., Jr., and Frederick C. Hillyard, who trade as Hillyard Optical Company, to discontinue the following representations: That the business which they operate as a partnership is the oldest optical company in Washington; that they make free examinations of the eyes of prospective customers, render an efficient and satisfactory service and guarantee satisfaction; that glasses complete with case and cleaner and regularly priced at $12 and $15 are sold for $5, and that the prices so advertised are special and reduced, and available for a limited time only.

**Jung's Arch Braces and Other Products.**—Jung Arch Brace Company, Cincinnati; complaint issued June 3, 1942; order issued May 8, 1945. Order directed concern to discontinue the following misrepresentations, among others: That these braces are more effective than the strapping process in the treatment of foot ailments; that use of the braces will cure, correct the cause, or prevent the recurrence of pain in the feet, ankles, calf, knees, toes, instep, or ball or heel of the foot, or give immediate relief to foot ailments generally; that continued use of the braces will correct such ailments and that these devices act as an extra muscle and produce a massage action sufficient to stimulate blood circulation and provide a fresh supply of energy; that Jung's Ankle and Foot Braces give the ankle and foot more perfect bracing than any other device or method, and will cure weak ankles or foot conditions, prevent strains or turning of ankles, correct or prevent swellings, hold muscles or ligaments in place, or restore the arch to normal; that Jung's Futuro Knee Braces will help relieve weak or painful knees regardless of cause or help secure comfort and relief in all types of knee troubles; that Jung's Sanskin Corn Pads and Meds will permanently remove corns, warts, calluses and bunions; that Jung's Callus Pads and Meds will stop pain instantly and permanently remove calluses, or that any relief afforded will be more than temporary; that Jung's Toe Guides will straighten a distorted large toe, relieve and correct bunions, crooked or overlapping toes and soreness between the toes, except such soreness as may be caused by overlapping toes; that Jung's Foot Balm will relieve irritated and aching feet in excess of affording temporary relief from pain and itching caused by minor irritations, or will invigorate weak or overstrained muscles or restore vitality to the feet; that Jung's Nail-Rite relieves ingrown toenails or aids in their correction, or that Jung's Foot Soap cleanses the pores or thoroughly deodorizes the feet.

**Williams Treatment.**—Dr. D. A. Williams Company, East Hampton, Conn.; complaint issued May 13, 1942; order issued April 24, 1945. Order directed the respondent to discontinue the misrepresentations in his advertising, among which were that the treatment would correct or overcome excess uric acid or neutralize uric acid excess or prevent its deposit in the kidneys, joints, tissues or muscles, overcome damage which too much uric acid may have caused the body; enable the body to maintain a proper alkaline balance and correct the fundamental cause of predisposition to disease. The Commission's findings were that the Williams concern's claims for its treatment were based on the theory that the numerous diseases and conditions for which the nostrum was recommended as a cure or relief were caused by, or were symptoms of, excess uric acid in the body, whereas expert medical testimony was obtained showing that there is no relation between excess uric acid and the diseases and conditions in question, and further, that the preparation was incapable of correcting any excess uric acid condition or any of the ailments or diseases mentioned in the advertising. The Williams quackery was dealt with at considerable length in The Journal May 31, 1919, page 1632, and Nov. 9, 1929, page 1493.

# Bureau of Legal Medicine and Legislation

## MEDICOLEGAL ABSTRACTS

**Malpractice: Death Following Administration of Nitrous Oxide.**—The plaintiff sued for damages for the death of her son alleged to have resulted from the professional malpractice of the defendant dentist. From a judgment in favor of the plaintiff, the defendant appealed to the Supreme Court of Minnesota.

The plaintiff's son went to the defendant dentist's office for the purpose of having some teeth extracted. Pursuant to prior arrangement, the defendant was going to administer gas during the operation, gas having been used on him twice before for the same purpose without any ill effect or unpleasantness. When the son arrived at the defendant's office he informed the defendant that he had taken some anacin to alleviate the toothache in the teeth to be extracted. Defendant then gave him some nembutal in a glass of water and had him sit in the waiting room. About one half or three quarters of an hour later defendant asked the son to return to the operating room and sit in a dental chair. The defendant's testimony was to the effect that he connected the apparatus for administering the gas to the patient's mouth and nose and that he brought him under in a minute. Patient was then cyanotic. Defendant disconnected the mouth part of the apparatus but continued to administer gas through the nose for another two minutes, while he extracted three teeth. He then discovered that something had gone wrong. The deceased was laid on the floor, the fire department rescue squad was sent for and an attempt was made to resuscitate him but it was unsuccessful. He had died while in the dental chair.

Proper administration of gas as an anesthetic necessarily involves the exercise of due care to guard against the dangers incident to its use, said the Supreme Court. The exclusion of oxygen from the blood produces changes in the action of the eyes, breathing and the color of the skin by which the patient's condition can be observed. When sufficient gas has been administered to anesthetize the patient, his skin becomes cyanotic or bluish in tint. While cyanosis is a normal condition in the process and in itself is not a danger signal, it marks the point beyond which further administration of the gas might entirely stop respiration and consequently might be dangerous. When the patient is getting too much gas, he struggles for oxygen. Defendant testified that in fighting for oxygen under such circumstances the patient "makes a crowing noise in the throat that nobody would overlook." He also characterized the noise as a gurgling one. The plaintiff, mother of the deceased, was sitting in the waiting room during the operation. There was only a thin glass partition between it and the operating room and the plaintiff said that almost immediately after defendant commenced to administer the gas she heard a gurgling noise. Defendant testified, however, that the gurgling noise which she heard was the gurgling of water in a cuspidor attached to the dental chair, not the "peculiar gurgling or rattling in the throat."

The questions for decision, said the Supreme Court, are (1) whether there was any evidence to show that the administration of the gas was a cause of death and (2) whether there was any evidence to show that defendant was guilty of negligence in administering it.

There was evidence to show that asphyxiation caused by the administration of the gas was a cause of decedent's death. The death certificate showed that the deceased died at an address shown to be defendant's office of "Asphyxia by nitrous oxide Gas—during extraction of teeth." Dr. Stangl, who gave an opinion, stated that decedent died in the dental chair as a result of the anesthetic or the shock of the extraction of the teeth, or both. He qualified this opinion by stating: "I think that a man that gets a nitrous oxide anesthesia over a period of three minutes and dies and has had sufficient nitrous oxide to produce an anesthesia has had a lot of nitrous oxide. It is not likely that factors other than the lack of oxygen caused death." Aside from the certificate of death, there was evidence to show that decedent died from asphyxia. While Dr. Stangl expressed the opinion that decedent died from asphyxia or shock, or both, he practically excluded shock as a cause of death by stating that it was not likely that factors other than lack of oxygen caused death. Defendant's own evidence went far to eliminate shock as a cause of death, because he testified that a gurgling sound is present in cases of death by asphyxiation, but not by shock. Plaintiff's testimony showed that there was a gurgling sound. This, according to defendant's own view, eliminated shock as the cause of death.

There is no dispute that it is the duty of a dentist, in administering an anesthetic to a patient, to exercise such reasonable care and skill in that behalf as is usually exercised by dentists of good standing in the community where he practices. In our opinion, said the court, the defendant employed the methods and technics considered to be good practice according to such standards. The real question is whether in the particular manner in which he employed such methods and technics he exercised due care. We think the evidence supports a finding that he did not. On the one hand, the court continued, there was evidence that he gave an overdose of nitrous oxide gas. After he had brought decedent into a state of anesthesia, he continued for two more minutes to administer gas to him through the nose. According to Dr. Stangl, this was "a lot of nitrous oxide" gas and consequently it was not likely that other factors than the lack of oxygen caused death. The fact that decedent underwent two prior administrations of the gas for teeth extractions tends to show that he was able to withstand the effects of gas without shock. It is negligence, said the court, for a dentist to persist in the use of an anesthetic on a patient after a warning which would impel a person of reasonable prudence to desist. In speaking of the liability of a physician in such a case, the Supreme Court has said in a prior decision:

> When that condition [cyanosis] appears it is a signal of warning to a physician that, if the ether is persisted in, it is dangerous, and if persisted in too much it will cause the death of the patient.
>
> . . . . . .
>
> . . . If a surgeon persists in the use of an anesthetic after warning which would impel one of reasonable prudence to desist he should be held to answer for the consequences.

Accordingly the court held that both questions were answered in the affirmative and that the judgment in favor of the plaintiff should accordingly be affirmed.—*Harris v. Wood, 8 N. W. (2d) 818 (Minn., 1943).*

**Crimes: Sales of Pentobarbital Without Physician's Prescription as Contributing to Delinquency of Minor.**—The defendant pharmacist was charged with contributing to the delinquency of a minor by selling him pentobarbital without a physician's prescription. The sale of such drug without prescription is prohibited by the state penal code (section 347½) and when the sale is to a minor it is a violation of the welfare and institutions code (section 702). From a conviction, the defendant appealed to the district court of appeal, second district, division 1, California.

One of the minors involved in this case, a boy 16 years of age, was in the vicinity of the defendant's drug store. He gave some money to a companion, who in turn gave it to a third boy, who went into the drug store and emerged with a paper bag containing twelve pills. The minor testified:

> . . . On taking the pills in about twenty minutes or so they take effect on you and you get so that you don't know what you are doing, like a drink of whisky only it may be worse.

That evening the minor was arrested in a pool hall, and on the way to the police station some "little yellow capsules" were found in the lining of his jacket. Some days later the deputy sheriff gave the minor a marked dollar bill. He and three other officers then drove to the vicinity of the defendant's drug store and watched from across the street while the minor handed the dollar bill, or what looked like it, to a boy, who went into the drug store and in a few minutes emerged with a small paper bag which he handed to the minor. It was found to contain five yellow capsules. The officers then entered the store, recovered the marked dollar bill and took the defendant into custody. They examined the prescription file in the store and found none recorded for that day. Two of the officers

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testified that they saw empty bottles labeled "pentobarbital" and "sodium." At the trial the testimony of a chemist was read into the record. This testimony was to the effect that each capsule contained a grain and a half of pentobarbital, which also went under the trade name of Nembutal. The president of the state board of pharmacy testified that Nembutal is a trade name for sodium pentobarbital, a barbituric acid.

The defendant argued that no violation of law was shown for the reason that section 347½ of the penal code make no mention of pentobarbital but authorizes the refilling of a prescription for phenobarbital. This contention, said the court of appeals, is without merit. Section 347½ of the penal code made it unlawful to sell any

> veronal, barbital (acid diethylbarbituric) or other barbituric acid derivative or their salts, derivatives or compounds of the foregoing substance, or any preparation or compound containing any of the foregoing substances, or their salts, derivatives or compounds, except upon the order or prescription of a physician . . .; provided, however, that any prescription for phenobarbital or any preparation, mixture or compound of phenobarbital may be refilled . . .

The evidence produced was ample to warrant the jury in concluding that the defendant sold the yellow capsules on the dates in question and that such capsules contained a barbituric acid derivative. The defendant also contended that there was no evidence showing that the minors had, or did not have, a prescription. The court said that it was not incumbent on the prosecution to demonstrate the absence of a prescription. In a prior California case it was held:

> We may add that if the defendant in a case, like the one here, is prosecuted under the State Poison Act, and his possession of any of the narcotics falling under the condemnation of the statute is upon the prescription of a physician given in good faith or for purely medicinal purposes, he may shield himself against punishment by exhibiting the prescription and so proving the fact that such possession was lawful.

No such proof was offered in the present case.

Other contentions raised by the defendant were also overruled. Accordingly, the judgment and order denying the defendant's motion for a new trial were affirmed and the conviction, in effect, sustained.—*People v. Brac, 167 P. (2d) 535 (Calif., 1946).*

**Charitable Hospitals: Liability for Injuries to Pay Patients.**—The plaintiff filed suit for damages for injuries sustained while she was a patient in the defendant hospital. From a judgment in favor of the hospital, plaintiff appealed to the Supreme Court of Washington.

The plaintiff entered the defendant hospital, a charitable institution, for the birth of her baby. When her labor pains started she was taken to the delivery room by the day superintendent, who placed her on a delivery table and strapped her wrists. While the superintendent was temporarily out of the room, and while an intern's back was momentarily turned, the plaintiff pulled her hands out of the wrist straps and fell off the table, suffering a dislocated scapula and partial paralysis of the right arm. There was evidence that the plaintiff had a long slender hand not much bigger around than her wrist and that the superintendent fitted the wrist straps snugly but made no particular examination of the plaintiff's hands.

It has long been the law of this state, said the Supreme Court, that, even if paying for the service (as the plaintiff was doing), one cannot recover with respect to an injury suffered through the negligence of a servant of a charitable corporation in performing that service unless the corporation be found not to have exercised due care in employing that servant or unless the circumstances show some kind of administrative negligence. If the plaintiff was injured as the result of an act of negligence, the court continued, it must have been some act of the day superintendent or the intern, or by some kind of administrative negligence. But due care was shown in the selection of both the superintendent and the intern and we find no evidence tending to show administrative negligence. The plaintiff, however, urged that the rule of limited liability of a charitable hospital be abandoned. The Supreme Court then discussed the various rules of liability, ranging from total immunity to full liability, applicable to charitable institutions, and "after a careful consideration of the matter" it concluded that it should not abandon or modify the limited liability rule which it has so long held applicable in cases of this character. Accordingly the judgment in favor of the defendant hospital was affirmed.—*Weiss v. Swedish Hospital, 133 P. (2d) 978 (Wash., 1943).*

**Health Department: Personal Liability of Officers.**—This was an action to recover damages for personal injuries resulting from typhoid fever allegedly caused by the negligence of the defendants (officers and employees of the Department of Public Welfare and Department of Public Health) in permitting the use of contaminated water. From a judgment in favor of the defendants, the plaintiff appealed to the circuit court of appeals, seventh circuit.

In some manner not specified the drinking water used at the Manteno State Hospital, a state institution for the treatment of the insane, became contaminated with typhoid bacilli, with the result that a number of employees died and others suffered from the disease of typhoid fever. Were the officers of the State Department of Public Welfare and Department of Public Health, charged with the administration of the hospital, personally liable for such deaths and injuries?

No specific duty to furnish safe drinking water at the Manteno State Hospital is provided by statute, said the court. If any such duty exists, it must stem from the general undertaking assumed by the state of Illinois to provide for the health and welfare of all its citizens in and out of state institutions. This is a duty owing by the state to its citizens, not a duty owing by these officers of the Department of Health and the Department of Public Welfare to any particular individual. They are the mere instrumentalities or agents through which the state undertakes to discharge its assumed duty to its citizens. When the state defines by statute the powers and describes the duties of the officers of these departments, it is not creating duties the officers owe to the individuals who may constitute the general public of Illinois; it is merely outlining the state's assumed public duty. In such a situation, the court continued, the law seems to be clear that if the duty discharged is a public duty and not a duty which the individuals owe to any particular person, then for their negligence or wanton or wilful omission in the performance of this public duty the officers are not liable, except to the state. Cooley on Torts states:

> The rule of official responsibility, then, appears to be this: That if the duty which the official authority imposes upon an officer is a duty to the public, a failure to perform it, or an inadequate or erroneous performance, must be a public, not an individual, injury and must be redressed, if at all, in some form of public prosecution. On the other hand, if the duty is a duty to the individual, then a neglect to perform it, or to perform it properly, is an individual wrong and may support an individual action for damages.

The court then cited the case of a quarantine officer as an illustration of the general rule. His duty, the court pointed out, requires him to take proper steps to prevent the spread of contagion, and he is culpable in a very high degree if he neglects to do so. Let it be supposed that a neglect occurs and that a great number of persons are infected in consequence. Not one of these persons can demand of the officer a personal redress. The reason is obvious: The duty was laid on the officer as a public duty—a duty to protect the general public—but the office did not charge the incumbent with any individual duty to any particular person. If one rather than another was injured by the neglect, it was only that the consequences of the public wrong chanced to fall on him rather than on another; just as the ravages of war may chance to reach one and spare another, though the purpose of the government is to protect all equally. The duty imposed on the officer was a duty to the public—to the state, of which the individual sufferer was only a fractional part, and incapable as such of enforcing obligations which were not individual but general.

The court therefore concluded that, since the defendants in this case were discharging a public duty and not a duty they owed to the individual plaintiff, there can be no liability to such plaintiff. Accordingly the judgment in favor of the defendants was affirmed.—*People of State of Illinois, for Use of Trust Co. of Chicago, v. Maryland Casualty Co.; Maryland Casualty Co. v. Bowen, 132 F. (2d) 850 (1942).*

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# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Clinical Pathology, Baltimore

**16:**293-346 (May) 1946

Studies on Vi Agglutination Test for Detection of Typhoid Carriers. Cora B. Gunther.—p. 293.
*Thiouracil Granulocytopenia and Agranulocytosis: Prognostic Value of Sternal Marrow Examination. L. R. Limarzi and H. Ricewasser. —p. 306.
*Notes on Pathogenesis of Congenital Hemolytic Disease (Erythroblastosis Fetalis). A. S. Wiener.—p. 319.
Endocardial Sclerosis in Infants and Children. G. E. Cosgrove Jr. and D. H. Kaump.—p. 322.
Multiple Primary Carcinomas of Kidney and Bladder. A. E. Rappoport, C. E. Nixon and E. J. Salmeri.—p. 341.

**Thiouracil Granulocytopenia and Sternal Marrow Examination.**—Limarzi and Ricewasser report a case of agranulocytic angina and a case of granulocytopenia following the administration of thiouracil. In the case of fatal agranulocytic angina there was aplasia of myeloid elements in the bone marrow. In the case of granulocytopenia the blood showed leukopenia, neutropenia and the reticuloendothelial type of monocytes, while the bone marrow was quantitatively normal and exhibited moderate myeloid immaturity. The blood picture returned to normal after discontinuance of thiouracil for a short period, following which it was possible to resume thiouracil therapy in smaller dosage without return of the granulocytopenia. Thiouracil administration should be accompanied by weekly complete blood counts to anticipate the development of agranulocytic angina and granulocytopenia. With any aberration in the peripheral blood the cellular bone marrow pattern should be investigated because of its value in differential diagnosis and because it offers the most dependable criterion in the prognosis of agranulocytosis.

**Pathogenesis of Congenital Hemolytic Disease.**—Wiener lists the following as puzzles in the pathogenesis of congenital hemolytic disease and of intragroup transfusion incompatibility: (1) the sensitization to the Rh factor by only 1 in approximately 40 Rh negative individuals after exposure to Rh positive blood; (2) the apparent lack of correlation between the titer of the anti-Rh agglutinins in the patient's serum and the intensity of the sensitization; (3) the development of jaundice and anemia often severe enough to cause death within a few hours or days in infants apparently normal at birth; (4) the role of A and B factors in congenital hemolytic disease; (5) the almost invariable escape from congenital hemolytic disease by the first born, unless the mother has been sensitized by a previous injection of Rh positive blood; (6) the occurrence of congenital hemolytic disease when the mother is Rh positive, and (7) the manifold clinical manifestations of congenital hemolytic disease.

### American J. Digestive Diseases, Fort Wayne, Ind.

**13:**127-172 (May) 1946

Use of Carbohydrate in Diabetic Acidosis. J. P. Peters.—p. 127.
What is the Cause of Diabetes Mellitus in Man? I. A. Mirksy.—p. 130.
Surgery of Acute Abdomen in Patients with Diabetes Mellitus. Beverly C. Smith.—p. 138.
Medical Management of Diabetic Patient During an Acute Abdominal Emergency. L. Bauman.—p. 140.
Recent Advances in Management of Gangrene and Infections in Patients with Diabetes Mellitus. L. S. McKittrick.—p. 142.
Quarter of Century in Medical Research. C. H. Best.—p. 148.
Carbohydrate Metabolism in Traumatic Shock. R. E. Haist.—p. 152.
Factors Affecting Fat Transport in Animal Body. C. H. Best.—p. 155.
Evaluation of Blood Sugar Tests: Significance of Non-Glucose Reducing Substances and Arteriovenous Blood Sugar Difference. H. O. Mosenthal and Eileen Barry.—p. 160.

### American Journal of Ophthalmology, Cincinnati

**29:**645-784 (June) 1946

Incipient Pannus as Sign of Primary Corneal Infection of Trachoma and as Important Criterion for Early Diagnosis of Disease. P. K. Kuo. —p. 645.
Exophthalmic Ophthalmoplegia and Its Relation to Thyrotoxicosis. Ida Mann.—p. 654.
Belgian Ophthalmology During War. F. Bonhomme and H. Agatston. —p. 674.
Oxycephaly Associated with Klippel-Feil Syndrome and Other Skeletal Defects. A. L. Peter.—p. 685.
*Penicillin in Gonococcic Conjunctivitis: Its Use in 30 Cases, Compared with Sulfonamides in 173 Cases. P. M. Lewis.—p. 694.
Oculoglandular Tularemia: Report of 3 Cases with Unusual Contacts. A. A. Siniscal.—p. 698.
Angioma of Retina: Report of 2 Cases with Fundus Photographs. O. D. Pinkerton.—p. 711.
Amblyopia Ex Anopsia in Armed Forces. G. E. Morgan.—p. 713.
Detergents or Wetting Agents: Physical and Chemical Characteristics. R. J. Roth.—p. 717.

**Penicillin in Gonococcic Conjunctivitis.**—According to Lewis 203 cases of gonococcic conjunctivitis have been treated during the past eight years and four months at the Isolation Hospital in Memphis. One hundred and seventy-three were treated with sulfonamides and 30 with penicillin. Local treatment by instillation of sodium sulfathiazole 1 to 5 per cent or penicillin 500 to 2,500 Oxford units per cubic centimeter has been used in addition to the systemic treatment in almost all cases. Both the sulfonamides and penicillin are amazingly effective in gonococcic infections of the eye. Sulfadiazine, being quite effective and well tolerated, is recommended if penicillin is not available. Penicillin is even more effective. It is easier, in infants, to administer than a sulfonamide and it may be given without fear of toxic reaction. The systemic use of both penicillin and sulfadiazine is recommended in severe cases, especially those with corneal involvement. The authors do not feel justified in withholding systemic therapy and relying entirely on the local use of penicillin in gonococcic ophthalmitis, although they think that its local use is helpful and should be employed. Penicillin is at present the most effective agent for the cure of gonococcic infections of the eye.

### American Journal of Psychiatry, New York

**102:**721-864 (May) 1946

History of Development of Neuropsychiatry in European Theater of Operations. J. F. Casey.—p. 721.
Logistics of Neuropsychiatric Problem of Army. E. Ginsberg.—p. 728.
Problems Confronting Psychiatry in Army Convalescent Hospital. W. C. Menninger.—p. 732.
Army Consultation Services (Mental Hygiene Clinics). M. S. Guttmacher.—p. 735.
Morale of Troops on Occupation Duty. N. Warner.—p. 749.
Commitment of Mentally Ill. W. Overholser and H. Weihofen.—p. 758.
Gerontologic Treatise of Renaissance: "De Bono Senectutis" by Gabriele Paleotti (1522-1597). K. Stern and T. Cassirer.—p. 770.
Constitutional Anhedonic Personality. A. Myerson.—p. 774.
Shock Therapy in Psychoses Complicated by Pregnancy: Report of 2 Cases. A. Gralnick.—p. 780.
*Combined Shock and Corpus Luteum Hormone Therapy. O. Billig and J. D. Bradley.—p. 783.
Occupational Hazards and Psychoses of Psychiatrists. H. Stanka.—p. 788.
Electroencephalogram and Psychophysiologic Regulation in Brain. C. W. Darrow.—p. 791.
Effects of Sedative Drugs on Electroencephalogram. Margaret Lennox. —p. 799.
Toxicity of Atabrine to Central Nervous System. H. W. Newell and T. Lidz.—p. 805.
Psychiatry Has Growing Pains. C. H. Jonas.—p. 819.
Classification and Reallocation of "Exhaustion" Casualties in Theater of War. C. H. Gundry.—p. 822.
Marihuana and Aggressive Crime. W. Bromberg and T. C. Rodgers. —p. 825.
Review of Psychiatric Progress in South America During 1944. A. C. Pacheco E. Silva.—p. 828.

**Combined Shock and Corpus Luteum Hormone Therapy.**—Billig and Bradley observed shock therapy by progesterone therapy in 12 cases. Nine of the cases were diagnosed as schizophrenia, 1 as schizoaffective psychosis and 2 as manic episodes of the manic-depressive group. In 3 cases this combination therapy was preceded by insulin shock, in 3 others by electric shock treatments; in 5 more electric shocks were combined with insulin shock therapy; in 1, metrazol convulsions had been given. Two mg. of progesterone was administered intramuscularly mostly on the twelfth and fourteenth days following the first day of the preceding menstrual cycle. Occa-

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sionally the doses were increased to 5 mg. each; a third dose was given on the sixteenth day, if indicated. In cases in which a psychosis developed following childbirth 2 to 5 mg. of progesterone for three doses was given. This medication was continued for ten to twelve months. When menstruation was missing, the next series of progesterone was started four weeks after the first of the preceding injections. The authors found that combined shock and corpus luteum therapy was of benefit in the alleviation of psychotic symptoms, especially if connected with "postpuerperal" and premenstrual activations or exacerbations.

## American Journal of Public Health, New York

**36:**593-702 (June) 1946

Present Position of DDT in Control of Insects of Medical Importance. F. C. Bishopp.—p. 593.
National Sanitation Foundation. H. F. Vaughan.—p. 607.
Frequency of Hemolytic Streptococci in Throats of Well Children in Dallas. R. M. Pike and Gladys J. Fashena.—p. 611.
Value of Community Health Centers in Preventive and Curative Medicine. H. Williams.—p. 623.
Some Phases of School Health Services. Leona Baumgartner.—p. 629.
Epidemiology of Venereal Disease. T. H. Sternberg.—p. 636.
*Inactivation of Poliomyelitis Virus by "Free" Chlorine. G. M. Ridenour and R. S. Ingols.—p. 639.
Antitoxin Titers Following Immunization with Protamine Precipitated Diphtheria Toxoid. V. Ross, Frances L. Clapp and Bertha W. Schimpf.—p. 645.
Selective Medium for Isolation of Brucella Suis. S. Elberg, E. P. Edwards and R. W. Swanson.—p. 650.
DDT in General Health Program. H. G. Hanson.—p. 653.

**Inactivation of Poliomyelitis Virus by "Free" Chlorine.**—Newer knowledge on chlorine testing has made it possible to measure more accurately the concentration of free or uncombined chlorine in the hypochlorous state in organically polluted solutions. This is done by the orthotolidine-arsenite test. The test gives a measurement of either the "free chlorine," combined chlorine, such as chloramines, or total available chlorine. In contrast to previous studies, this investigation showed that chlorine is an effective inactivating agent for the Lansing strain of poliomyelitis virus if related to the actual "free" or uncombined chlorine residual in solution. The amounts of "free" chlorine needed for inactivation are well within the range of dosages used in water treatment and swimming pool sanitation when "break point" chlorination is employed.

## American Journal of Tropical Medicine, Baltimore

**26:**257-378 (May) 1946

Isolation of Yellow Fever Virus from African Mosquitoes. K. C. Smithburn and A. J. Haddow.—p. 261.
Histoplasmosis in Brazil. M. Pará.—p. 273.
Oral Emetine in Treatment of Intestinal Amebiasis: Preliminary Report. B. C. Shrapnel, C. M. Johnson and J. H. Sandground.—p. 293.
*Preliminary Report on Evaluation of Penicillin in Treatment of Yaws. J. H. Dwindelle, C. R. Rein, T. H. Sternberg and A. J. Sheldon. —p. 311.
Case in Which Eggs of Schistosoma Japonicum Were Demonstrated in Multiple Skin Lesions. H. M. Fishbon.—p. 319.
Treatment of Schistosomiasis Mansoni with Urea Stibamine (Squibb): Preliminary Report. F. Hernández-Morales, J. Oliver-González and Caroline Kreiss Pratt.—p. 327.
Simplified Quantitative Methods for Hookworm Control Programs. J. A. Scott.—p. 331.
Treatment of Hymenolepis Nana Infection with "Acranil." D. A. Berberian.—p. 339.
Emergency Sterilization of Drinking Water with Heteropolar Cationic Antiseptics: I. Effectiveness Against Cysts of Endameba Histolytica. J. F. Kessel and F. J. Moore.—p. 345.
Precautions by Army to Prevent Introduction of Tropical Diseases. O. R. McCoy.—p. 351.

**Penicillin in Yaws.**—Dwindelle and his associates used penicillin in the treatment of 500 patients with primary and secondary yaws infections in Haiti. They believe that penicillin holds promise as a therapeutic agent in yaws. Its use in doses of 1,200,000 Oxford units in adults and proportionate doses for children given over periods of four, two and one days respectively resulted in rapid clinical cures. The serologic response was not as striking as the clinical. The oil-beeswax preparation of penicillin made it possible to treat patients on an ambulatory basis over one and two days with the same dose of penicillin given in aqueous solution to hospitalized patients over four days. The immediate clinical and serologic results obtained with penicillin in oil with beeswax appeared to be as good as those of the aqueous solution. The development of a successful one day treatment schedule would be of great practical value in a country such as Haiti, where large numbers of patients must be treated on an ambulatory basis in rural clinics.

## Anesthesiology, New York

**7:**233-354 (May) 1946

Anesthesia of Recent Injuries of Jaw and Face. G. K. T. Roche.—p. 233.
Search for Least Irritant Topical Anesthetic. W. C. Dietrich and R. Beutner.—p. 255.
Histamine-like Action of Curare and Tubocurarine Injected Intracutaneously and Intra-Arterially in Man. J. H. Comroe Jr. and R. D. Dripps.—p. 260.
Pentothal Sodium: Its Use in Presence of Hepatic Disease. C. H. Scheifley.—p. 263.
Choice of Anesthesia in Cardiac Disease. S. Belinkoff.—p. 268.
Prothrombin Time and Anesthesia: Clinical Investigation on Effects of Ether and Spinal Anesthesia on Prothrombin Level of Blood. S. Levy and Loretta Conroy.—p. 276.
Use of Endotracheal Tube in Therapy of Posttraumatic Pulmonary Secretions. R. Foregger.—p. 285.
*Fatal Fat Embolism: Case Report. E. A. Doud and E. A. Rovenstine. —p. 291.
Abducens Nerve Palsy Following Spinal Anesthesia. B. Steinberg and H. F. Bishop.—p. 296.
Convulsions During Ether Anesthesia Controlled by Curare (Intocostrin). I. Greenfield.—p. 299.
*Postoperative Heat Stroke. M. B. Genauer.—p. 302.

**Fatal Fat Embolism.**—Doud and Rovenstine report a case of fat embolism in a woman aged 55 with a three day old fracture of the left femur. Morphine sulfate 0.008 Gm. and scopolamine hydrobromide 0.0003 Gm. were given hypodermically one hour preoperatively. The induction and maintenance of cyclopropane anesthesia were uneventful for forty-three minutes. Suddenly the blood pressure and pulse rate could not be elicited and the respiratory rate increased to 36. With the patient in profound circulatory collapse the breathing bag was repeatedly emptied and refilled with oxygen in an attempt to wash the anesthetic agent from the patient's tissues. An oral endotracheal airway was inserted and dilution of the agent was continued. Irregular gasping respirations continued at a decreasing rate for approximately thirty minutes. During this period artificial respiration was performed, an infusion of 5 per cent glucose in isotonic solution of sodium chloride was started and epinephrine was injected into the infusion tubing. Thirty minutes after the onset all respiratory effort ceased. Necropsy disclosed pulmonary fat embolism. Branches of the pulmonary artery in both lungs were occluded. Analysis of the lung secretions and the urine disclosed the presence of fat. The heart was moderately distended.

**Postoperative Heat Stroke.**—Genauer reports 2 cases of heat stroke occurring in the same operating room on the same day. The first patient was a fireman aged 18, who was admitted with recurrent dislocation of the shoulder, and the second patient was a marine aged 19, who was admitted with compound fractures of the humerus, radius and ulna. There were no windows in the operating room, and ventilation was effected by a poorly functioning system of air ducts. On the day of operation the dry and wet bulb readings were 88 F. and 83 F. respectively, and the relative humidity was calculated to be 81 per cent. The multibeamed surgical lamp raised the temperature on the operating room table from 88 to 114 F. The rectal temperature reading of the patients on the operating room table was 105.5 and 105.4 F. respectively at the conclusion of the operation, and both patients had ceased sweating. The patients were removed to a recovery room, where ice water enemas, ice packs, oxygen and intravenous isotonic solution of sodium chloride were administered. Sweating did not begin again until nine hours after the conclusion of the operation. Recoveries from the attack of heat stroke were uneventful. Adequate conditions for the prevention of heat stroke center about the maintenance of a cool room of low humidity in which air currents are sufficient to produce comfort. The possibility of recording temperatures on a half hourly basis by the anesthetist, along with the more frequent recordings of blood pressure, pulse and respiration, is suggested. Increased amounts of fluid, especially isotonic solution of sodium chloride, should be administered before and during operation. Cool spongings with either alcohol or water should be used frequently. The preoperative amounts of cholinergic drugs should be reduced in hot weather, since they inhibit sweating. Inhalation anesthesia should be avoided during hot weather.

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## Archives of Dermatology and Syphilology, Chicago

**53:**563-696 (June) 1946

**Symposium on Diagnosis and Treatment of Cutaneous Cancer**

Cutaneous Cancer from Standpoint of Dermatologist. E. F. Traub.—p. 563.
Early Diagnosis of Cancer of Skin. G. Andrews.—p. 570.
Cutaneous Cancer from Surgeon's Point of View. J. P. Webster.—p. 573.
Treatment of Cutaneous Epithelioma. G. T. Pack.—p. 576.
Cutaneous Cancer from Point of View of Radiologist. W. Harris.—p. 586.
Radiotherapy of Epithelioma of Skin. M. Lenz.—p. 588.
Gross Pathology of Cutaneous Cancer. A. P. Stout.—p. 597.
Histopathology of Cutaneous Cancer. W. Sachs.—p. 599.

Unusual Case of Warts. O. G. Costa.—p. 604.
Epidermolysis Bullosa Simplex of Hands and Feet: Genetic Study of Hereditary Type. S. A. M. Johnson and A. R. Test.—p. 610.
Intrahepatic Obstructive Jaundice Due to Neoarsphenamine: Ineffectiveness of Therapy. F. L. Hartmann and A. G. Singer Jr.—p. 620.
*Treatment of Congenital and of Acquired Syphilis in Infants and in Children by Penicillin. A. W. Neilson, F. H. Chard and others.—p. 625.
Optimal Zone Reaction in Diagnosis and Treatment of Syphilis. R. L. Kahn.—p. 633.

**Penicillin Treatment of Syphilis in Children.**—Neilson and his associates treated 39 syphilitic children with penicillin; 28 of these patients have been followed for a minimum of two months after treatment. Twenty-one of these between the ages of 2½ months and 9 years had congenital syphilis and 7 between the ages of 5½ months and 10 years had acquired syphilis. Total dosages of from 500,000 units to 4,800,000 units were used, the average dosage for children being 1,200,000 units (100,000 to 125,000 units per kilogram of body weight). Seven patients were clinically and serologically free from syphilis. Six patients were clinically free from syphilis and serologically showed a titer of less than 4 Kahn units. Ten patients had strongly positive serologic reactions, but 9 of those showed a declining serologic titer of the blood. These 9 patients have shown clinical improvement. One patient has shown no improvement in blood serologic titer for three months. Four patients were lost to observation and 1 died. Although it is too early to attempt any conclusive evaluation of the penicillin treatment in syphilitic children, it was apparent that the spirochetes disappeared from local lesions within four to eight hours; the lesions healed rapidly and completely; syphilitic periostitis in 3 of the cases disappeared clinically in approximately one month, and in three months no roentgenologic evidence of bony syphilis could be found. There was a definite improvement of the child's nutritional state, both during and after penicillin therapy. In no case was infection at the site of injection observed, and in no case was an allergic reaction seen.

## Journal of Pediatrics, St. Louis

**28:**637-770 (June) 1946

Thickness of Skin and Subcutaneous Tissue by Age and Sex in Childhood. H. C. Stuart and Edna H. Sobel.—p. 637.
Fifteen Year Study of Prematurity from Standpoint of Incidence, Mortality and Survival. R. M. Tyson.—p. 648.
Crying of Newly Born Babies: IV. Follow-Up Study After Additional Nursing Care Had Been Provided. C. A. Aldrich, Mildred A. Norval, Catharine Knop and F. Venegas.—p. 665.
Intracisternal Penicillin: Observations of Its Effect on Dogs. L. S. Miller.—p. 671.
*Galactemia. A. Goldbloom and Helen Friedman Brickman.—p. 674.
*Immunization with Tetanus Toxoid: Persistence of Antitoxin and Effect of Stimulating Doses of Alum Precipitated Tetanus Toxoid After Five Year Period. A. McBryde and Mary A. Poston.—p. 692.
Establishment of Transfusion Clinic: Treatment of Mediterranean Anemia in Outpatient Department. Phyllis Koteen and Nathalie Brooks.—p. 697.
Does Milk Between Meals Hamper Appetite or Food Intake of Child? L. J. Wolman.—p. 703.
Dye Poisoning in Infancy. E. P. Scott, G. E. Prince and C. C. Rotondo.—p. 713.
Case of Tetralogy of Fallot with Absence of Cerebellar Vermis: Termination by Brain Abscess. S. S. Sidenberg, M. M. Kessler and R. Wolpaw.—p. 719.
Congenital Hemangioma of Parotid Gland. K. Glaser, W. H. Mehn and L. W. Schultz.—p. 729.
Practical Urine or Wet Diaper Signal. H. W. Seiger.—p. 733.

**Galactemia.**—A composite picture of galactemia includes (1) athrepsia with insatiable hunger, (2) hepatomegaly, (3) lamellar cataracts, (4) galactosuria and (5) mental retardation. All but the last are probably constant findings. This condition should be considered whenever hepatomegaly, inanition, cataract and melituria are encountered in young infants. Treatment of these children consists essentially in the withdrawal of milk. The substitute most commonly used has been a formula prepared from soybean flour, with other foods and vitamins suitable to the age period. The soybean formula was taken well by the first patient but not by the second. Washed milk curds resuspended in isotonic solution of three chlorides sweetened with corn syrup was successfully tried. Whereas any milk is injurious to these infants, human milk is more so than cow's milk because of its higher lactose content. The cataract in this condition is related to experimentally produced galactose cataract, which has been known to regress on withdrawal of galactose.

**Immunization with Tetanus Toxoid.**—McBryde and Poston report studies on the persistence of antitoxin after primary immunization and describe the effects of stimulating doses at the end of a year, after two and one-half years and after five years. The authors think that the great increase in serum antitoxin content resulting from the injection of 0.004 cc. of toxoid subcutaneously five years after the original immunization would lead one to believe that the stimulating dose may be unnecessary, although caution dictates its use. When the basic immunity has been well established, the presence of actual infection should cause the immunized individual to respond with rapid antitoxin formation. The response in this series was rapid and adequate, regardless of the level to which the antitoxin had fallen in the periods since primary immunization. Reactions were not severe. All children of school age were able to continue in school. About 10 per cent of the children complained of soreness at the site of injection. Twenty-four hours after the intracutaneous injection of 0.1 cc. of alum precipitated toxoid an area of erythema varying from 2 to 6 cm. was noted. A small nodule was formed, which disappeared in about four weeks. No abscess formation or necrosis occurred.

## Journal of Thoracic Surgery, St. Louis

**15:**153-226 (June) 1946

*Intracavitary (Monaldi) Suction. J. R. Head.—p. 153.
Principles of Improving Inadequate Tracheobronchial Drainage Following Trauma to Chest: Further Problems in Treatment of Wet Lung. P. C. Samson and L. A. Brewer.—p. 162.
Cervicomediastinal Lymphangioma with Chylothorax. E. A. Swift and H. Neuhof.—p. 173.
Musculoplastic Incision for Posterior Thoracoplasty. R. C. Brock.—p. 182.
*Treatment of Syphilitic Aneurysms by Cellophane Wrapping. J. K. Poppe and H. R. de Oliveira.—p. 186.
Cystic Disease of Lungs and Its Relationship to Bronchiectatic Cavities: Study of 22 Cases. J. A. Dickson, O. T. Clagett and J. R. McDonald.—p. 196.
Management of Thoracic and Thoracoabdominal Wounds in Forward Areas in Sicilian and Italian Campaigns. L. M. Shefts and E. A. Doud.—p. 205.
Foreign Body, Needle Stylet, in Pleural Cavity: Removal Through Thoracoscopic Procedure. I. Kross.—p. 224.

**Intracavitary (Monaldi) Suction.**—Monaldi's intracavitary suction has been used at the Edward Sanatorium for the past three years in 29 cases. It has come to occupy an important place in the treatment of pulmonary tuberculosis, but Head says that the early hope that it would prove an easy way of closing cavities and would therefore supplant some of the older forms of therapy has not been fulfilled. The difficulty in establishing it in small cavities, its uncertainty and the long period which it must be continued have limited its use to those patients who, because of low vital capacity, cannot be treated with pneumothorax, thoracoplasty or extrapleural collapse. In these cases in which no other form of treatment is possible it offers a possible means of arresting the disease. It is also used occasionally to reduce the size of extremely large cavities so that the thoracoplasty will be more likely to close them.

**Treatment of Syphilitic Aneurysms by Cellophane Wrapping.**—According to Poppe and de Oliveira a chronic progressive irritation, fibrosis and foreign body reaction are caused by the insertion of cellophane in close proximity to the vessel, thus providing a method of thickening the wall and occluding the lumen. Different varieties of cellophane produced entirely different physiologic reactions. Before satisfactory clinical application could be made of the properties of cellophane to produce a constricture fibrosis, a distinction was needed between the physiologically inactive and reactive types of cellophane. A series of animal experiments was conducted on dogs

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in which five different basic types of cellophane were used. Polythene cellophane was found useful. A case is reported of the successful clinical application of the polythene variety of cellophane to a fusiform aneurysm of the thoracic aorta. Three other syphilitic aneurysms of the ascending aorta have also been wrapped with polythene film, but insufficient time has elapsed to provide any data on the constrictive reaction. The use of polythene cellophane seems to offer a successful method of gradual fibrosis and obliteration of aneurysms and large vessels. It has been found useful not only in the treatment of aortic aneurysms but also in the obliteration of a patent ductus arteriosus.

## Medicine, Baltimore

**25:**111-214 (May) 1946

Ocular Changes of Primary Diffuse Toxic Goiter: A Review. A. C. Woods.—p. 113.
Scrub Typhus in Assam and Burma: Clinical Study of 616 Cases. J. J. Sayen, H. S. Pond, J. S. Forrester and F. C. Wood.—p. 155.

## Military Surgeon, Washington, D. C.

**98:**469-556 (June) 1946. **Partial Index**

Management of Acute Craniocephalic Injuries of War: Methods Applied in Evacuation Hospitals of Southwest Pacific Theater of Operations. K. H. Abbott.—p. 469.
Personal Experiences in Treatment of War Gas Burns of Upper Respiratory Tract During World War II. G. I. Uhde.—p. 483.
Observations on Fractured Carpal Scaphoid. J. J. Bedrick and S. A. Zawadzki.—p. 488.
Informal Report on Fusospirochetosis. F. L. Losee.—p. 491.
Significance of Blood Alcohol Determination. S. Mead.—p. 495.
Attitude Conditioning for Postwar Trainees. R. R. Cohen.—p. 496.
Acute Traumatic Tenositis of Tendon Calcaneus Due to Military Boots. L. M. Boyers.—p. 500.
Suggested Change in American Army Canteen to Increase Its Efficiency as Eye Irrigator. G. I. Uhde.—p. 503.

## Missouri State Medical Assn. Journal, St. Louis

**43:**365-428 (June) 1946

Highlights and Problems Related to Medical Care of Veterans. J. C. Harding.—p. 381.
Dermatitis Resulting from Exposure to DDT: Preliminary Report. G. V. Stryker and B. Godfroy.—p. 384.
Endocrine Problems in Gynecology. R. J. Crossen.—p. 386.
Need for Hill-Burton Bill. A. L. Hansen.—p. 396.

**43:**429-516 (July) 1946

Thymus Problem. D. S. Dann.—p. 445.
Poliomyelitis. S. L. Magiera.—p. 446.
Reinfection with Syphilis. C. C. Dennie and L. B. Mellott.—p. 450.

## Ohio State Medical Journal, Columbus

**42:**561-688 (June) 1946

Public Health and Treatment of Early Syphilis. R. L. Kile.—p. 593.
*Relapse During Penicillin Therapy of Syphilis. H. N. Cole, S. Ayers, J. H. Barr and others.—p. 595.
Light for Head Mirrors. R. E. MacQuigg and E. E. Schill.—p. 599.
Glycerite of Hydrogen Peroxide: Correlative Review of Laboratory and Clinical Data. E. A. Brown.—p. 600.
Tantalum Cranioplasty. O. A. Turner.—p. 604.
Differential Diagnosis Between Appendicitis and Adnexal Disease. J. L. Bubis.—p. 608.
Case of Concurrent Encephalitis and Acute Infectious Hepatitis. J. I. Goodman and E. V. Handelman.—p. 610.
The Rh Factor. A. L. Brown.—p. 613.
Cystic Fibrosis of Pancreas in Adult. H. K. Hellerstein.—p. 616.

**Relapse During Penicillin Therapy of Syphilis.**—Cole and his associates studied 730 cases of syphilis treated with various dosages of penicillin. Relapses which occurred in 110 cases appeared most frequently in the form of serologic relapses, then combined serologic and clinical relapses, neurologic relapses and clinical relapses with no change in serologic titer. Relapses varied with the amount of penicillin employed and were most frequent with small dosages, 60,000 units, 60,000 units plus oxophenarsine hydrochloride, eight doses (one every other day) and with 300,000 units. There seemed to be little or no difference in the incidence of relapse with 1,200,000 units, whether 20,000 units was given every three hours or 40,000 units every six hours. While the incidence of relapse is smaller with larger doses of penicillin, they are high enough to cause concern, particularly when it is realized that these higher dosage forms were employed more recently and there is still time for further cases to relapse. Perhaps higher dosages of penicillin should be used or even combinations of penicillin plus a trivalent arsenical or of penicillin plus fever therapy. Relapse can be best predicted and controlled by vigorous follow-up of cases and monthly titrated serologic tests for one year after complete reversal to a negative test.

## Radiology, Syracuse, N. Y.

**46:**547-654 (June) 1946

*Radiographic Diagnosis of Prolapsed Redundant Gastric Mucosa into Duodenum, with Remarks on Clinical Significance and Treatment. W. G. Scott.—p. 547.
Tuberculous Arthritis of Shoulder. M. R. Camiel.—p. 569.
Interarticular Isthmus Hiatus (Spondylolysis). H. H. Lerner and A. I. Gazin.—p. 573.
Treatment of Carcinoma of Cervix. J. A. Del Regato.—p. 579.
Some Experiences with Priodax. E. E. Fong.—p. 583.
*Pancreatic Calculi as Rare Cause of Intestinal Hemorrhage: Report of Case. G. Crile Jr. and H. L. Jaffe.—p. 586.
Roentgen Demonstration of Benign Intramural Tumor (Fibromyoma) on Greater Curvature of Stomach. A. Lewitan and K. K. Nygaard. —p. 590.
Simple Polygraph. E. W. Egbert and A. G. Fuller.—p. 594.
Primary Ewing's Sarcoma of Spine. A. E. Imler, D. B. Meilstrup and F. B. Bogart.—p. 597.
Enlarged Parietal Foramina and Similar Shadows Seen in Osteoporosis Circumscripta: Two Cases. C. H. Kelly.—p. 601.

**Prolapsed Redundant Gastric Mucosa.**—Scott says that in 1,346 successive x-ray examinations of the upper gastrointestinal tract made in a naval hospital 13 patients were found to have gastric ulcers, 325 duodenal ulcers, 17 duodenitis and 14 prolapses of the gastric mucosa. Thus, in this group of young and adult men, prolapse of the gastric mucosa occurred as often as gastric ulcer. Prolapse of redundant gastric mucosa should be suspected in duodenal ulcer patients with atypical histories, in patients that are refractory to an ulcer regimen and in those who have recurrences when placed on solid foods. The diagnosis of a prolapse of the gastric mucosa is established largely by the x-rays. The typical filling defect in prolapse of the gastric mucosa is a negative "cauliflower-like" defect in the base of the duodenal bulb opposite the pylorus, varying in size and shape during a single examination and on repeated examinations. Fluoroscopy supplemented with "spot films" is the most desirable method of examination. Since large prolapses of the gastric mucosa can produce symptoms, are a cause of gastric hemorrhage and may result in a partial pyloric obstruction, the roentgenologist should be on the lookout for them and distinguish them from other duodenal defects. The treatment in early and moderate prolapses is medical. In the large prolapses and in those complicated with repeated hemorrhages or partial pyloric obstruction surgical measures are indicated. They include excision of the redundant folds of mucosa and usually a pyloroplasty.

**Pancreatic Calculi as Cause of Intestinal Hemorrhage.** Crile and Jaffe report a case in which pancreatic calculi formed a fistula leading into the second portion of the duodenum. The mouth of this fistula had the appearance of a chronic peptic ulcer. On several occasions massive hemorrhage occurred, presumably from the ulcer or from the fistulous tract. Pancreatic calculi should be considered as a rare cause of bleeding from the upper part of the gastrointestinal tract. Radiographically a benign ulcer of the second portion of the duodenum may produce a deformity simulating a benign tumor with ulceration.

## Rhode Island Medical Journal, Providence

**29:**333-408 (May) 1946

The Wood Light: Aid to Diagnosis of Ringworm of Scalp and Other Dermatoses. F. Ronchese.—p. 347.
Acute Respiratory Diseases: Panel Discussion Given Before Providence Medical Association at Its Meeting at the R. I. Medical Society Library on Monday, March 4, 1946. A. M. Burges.—p. 352.
Acute Respiratory Diseases from Standpoint of Pediatrician. H. G. Calder.—p. 352.
Upper Respiratory Infection. F. B. Sargent.—p. 354.
Acute Respiratory Infections from Internist's Viewpoint. M. Cutts. —p. 355.

**29:**409-484 (June) 1946

Recent Studies in Prevention of Certain Infectious Diseases. J. Stokes Jr.—p. 423.
The Future of Medicine. J. F. Kenney.—p. 431.
Device for Holding Intranasal Tubes. N. C. Fontneau.—p. 449.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Surgery, Bristol

**33**:301-414 (April) 1946

*Painful Phantom Limb Treated by High Cervical Chordotomy: Report of 2 Cases. M. A. Falconer and J. S. B. Lindsay.—p. 301.
Vascular Tumor of Spinal Cord Associated with Skin Hemangiomata. S. Silverman.—p. 307.
Management and Surgical Resurfacing of Serious Burns. P. Clarkson and R. S. Lawrie.—p. 311.
Injuries to Pancreas and Their Surgical Treatment. A. S. Aldis. —p. 323.
*Paroxysmal Hyperinsulinism Due to Islet Cell Tumor of Pancreas. J. M. Holmes, B. R. Sworn and J. L. Edwards.—p. 330.
Present Position of Surgery in Treatment of Bleeding Peptic Ulcer. G. Gordon-Taylor.—p. 336.
Microincineration Study of Flat Epithelial Layer Covering Alimentary Tract. F. Duran-Jorda.—p. 346.
Metastatic Osteomyelitis Secondary to Tropical Ulcer. Margaret M. Shepherd.—p. 352.
Tendon Transplantation for Radial Paralysis. R. B. Zachary.—p. 358.
Case of Severe Electric Burns with Unusual Sequence of Complications. J. Smith and B. K. Rank.—p. 365.
Three Cases of Fracture Dislocation of Hip Occurring Simultaneously in One Car Accident. J. C. F. L. Williamson.—p. 368.
Simultaneous Carcinoma and Tuberculosis of Colon: Report of Case and Review of Literature. K. J. Randall and J. E. Spalding.—p. 372.
Solid Tumors of Epididymis: Report of 2 Cases. B. R. Sworn, F. W. Marshall and J. L. Edwards.—p. 375.
Congenital Atresia of Common Bile Duct: Report of Successful Case. T. E. D. Beavan and G. W. Duncan.—p. 378.
Osteochondritis Dissecans and Torn Lateral Meniscus. J. G. Bonnin. —p. 380.
Suture of External and Internal Popliteal Nerves. R. Roaf.—p. 382.
Hematemesis from Erosion of Splenic Artery by Peptic Ulceration. I. Aird.—p. 385.
Surgical Treatment of Severe Epistaxis in Relation to Ethmoidal Arteries. G. Wedderll, R. G. Macbeth, H. S. Sharp and C. A. Calvert.—p. 387.

**Chordotomy for Painful Phantom Limb.**—Falconer and Lindsay report 2 cases of painful phantom in the upper limb of an army corporal aged 27 and in a war pensioner aged 33 who were relieved by high cervical chordotomy performed by controlled graduated division under local anesthesia. These 2 patients did not belong to the group relieved by interruption of peripheral or sympathetic nerve pathways and in which pain impulses appear to arise in or around the neuromas of the divided nerves; they belonged to the other main group in which painful impulses arise in the dorsal horn cells of the spinal cord and can be relieved only by section of the spinothalamic tract or by excision of the sensory cortex of the cerebrum. Infiltration of the appropriate peripheral or sympathetic pathways with a local anesthetic solution is a useful diagnostic procedure for distinguishing clinically between these two groups. When these diagnostic tests fail to give relief, section of the spinothalamic tract is suggested and seems preferable to ablation of the sensory cortex because it does not destroy postural and other discriminative sensations in the stump but only abstracts from it the sensation of pain and so renders the stump functionally useful for such purposes as carrying an artificial limb.

**Paroxysmal Hyperinsulinism.**—Holmes and his associates report a case of hyperinsulinism due to a pancreatic island cell tumor. A boy aged 13 years had had several attacks of disturbed consciousness associated with twitching of the limbs and face. The attacks had usually been in close relation to meals, and occasionally they occurred after exercise. Some of the lapses of consciousness were followed by long periods of deep sleep or even stupor. An oral glucose tolerance test after a twelve hour fast revealed that the level of fasting blood sugar was 47.5 mg. per hundred cubic centimeters. Exploratory laparotomy revealed a tumor about the size of a pea in the head of the pancreas. The cerebral symptoms of the patient were entirely relieved by removal of the tumor. Glucose tolerance tests by intravenous injection of 20 Gm. of glucose before operation revealed an immediate rise in the blood sugar followed by a sharp fall during the first eight minutes of the test and then by an even greater rise. The sharp fall in blood sugar was not observed when the glucose tolerance tests were repeated after operation. The fasting blood sugar still remained at a rather low level but was higher than before. Microscopic examination of the removed tumor showed that complete capsulation was absent; the mass did not consist merely of island cells but included "ducts" and cells resembling the external secretory cells of the pancreas. Its position in contact with the duodenum was consistent with the embryologic origin as a duodenal bud. Island collections were found often abutting on "ducts" without interposition of fibrous tissue. It is suggested that the tumor was in the nature of heterotopia—anlage—with possibly some degree of benign neoplastic proliferation.

### British Medical Journal, London

**1**:903-942 (June 15) 1946

Paludrine in Treatment of Malaria. B. G. Maegraith, A. R. D. Adams, J. D. King and others.—p. 903.
Extrarenal Uremia. S. G. Zondek.—p. 905.
Pulmonary Exchange During Artificial Respiration. R. R. Macintosh and W. W. Mushin.—p. 908.
Observations on Normal Body Temperatures in North India. E. T. Renbourn, with statistical analysis by F. F. Bonsall.—p. 909.
Results of Mass Radiography of R. A. F. Ex-Prisoners of War from Germany. A. G. Evans.—p. 914.
Gas Gangrene of Gallbladder. W. R. S. Hutchinson.—p. 915.

### Lancet, London

**1**:877-912 (June 15) 1946

*Acute Hematogenous Osteomyelitis Treated with Penicillin. M. Agerholm and J. Trueta.—p. 877.
*Diet in Treatment of Infective Hepatitis: Therapeutic Trial of Cysteine and Variation of Fat Content. C. Wilson, M. R. Pollock and A. D. Harris.—p. 881.
Hemopoietic Action of 5-Methyl Uracil (Thymine) in Tropical Sprue. T. D. Spies, W. B. Frommeyer and others.—p. 883.
Estimation of Paludrine in Blood. E. J. King.—p. 886.
Salmonella Infection in Man: Conveyed by Duck's Eggs. P. C. Mallam and R. Alhadeff.—p. 887.
Anticoagulant Action of Soya Bean Trypsin Inhibitor. R. G. Macfarlane and J. Pilling.—p. 888.

**Penicillin in Acute Hematogenous Osteomyelitis.**—Agerholm and Trueta treated 30 cases of acute osteomyelitis with penicillin. Blood culture was positive in 14 cases. Penicillin was first given systemically in a dose of 100,000 units in twenty-four hours. Later this dose was increased to 400,000 units to obtain a concentration which should be bactericidal as well as bacteriostatic. When the infection appeared to be adequately controlled, the dose was reduced to a minimum of 100,000 units in twenty-four hours. Two well defined groups were distinguished: (1) patients admitted before the bone was seriously damaged and before pus had formed and (2) those admitted with an abscess already present. Group 1 could be treated successfully with systemic penicillin alone, provided the course was sufficiently long and intensive; 7 of 30 patients admitted were suitable for this treatment. Group 2 must be treated surgically as well as with penicillin, and surgery must include release of pus in the bone by drilling; after this, primary suture is safe and advisable to prevent secondary infection. Patients in group 2 not treated with surgery as well as with penicillin developed a spreading decalcification of the bone. In the entire series there was no death, no joint involvement and no secondary focus after admission. At the end of eighteen months 4 patients still have a sinus, but 2 of these are nearly healed; 28 patients have normal function; 1 patient admitted with septic arthritis of the knee has limited range of movement; 1 has a sinus which keeps her in the hospital.

**Diet in Infective Hepatitis.**—Wilson and his associates decided to combine a comparison of high fat and low fat diets with the therapeutic trial of the sulfur-containing amino acid cysteine in patients with infective hepatitis. Five Gm. of dl-cysteine was given daily by mouth in morning and evening doses of 2.5 Gm. The amino acid has an objectionable taste. The solution was mixed with sweetened fruit juice to disguise the taste. Treatment was continued until the urine became bile free by the foam test. The mean period of administration was 11.1 days. A series of 103 cases was studied, alternate members of the control and treated groups being placed on high fat or restricted fat diet (approximately 200 Gm. and 70 Gm. of fat respectively) during the period of biliuria. The protein content of the diet was similar in the two groups. It was found that the administration of cysteine to 52 patients with infective hepatitis produced a significant shortening of the period of recovery compared with 51 control cases. This appeared to be due to the smaller number of relapses in the treated group. A comparison of the progress of 52 patients on a low fat diet with that of 51 on a high fat diet revealed no significant difference in the rate of recovery.

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## Revista Clinica Española, Madrid

**20**:283-378 (Feb. 28) 1946. **Partial Index**

*Clinical Study of Spanish Recurrent Fever, Especially Its Neurologic Symptoms. E. Díaz Ferrón.—p. 283.

**Spanish Recurrent Fever.**—According to Díaz Ferrón, neurologic symptoms are so constant in the febrile stage of the Spanish recurrent fever that a definite diagnosis can be made even before the appearance of parasites in the blood. The infection is caused by Borrelia hispanicum and is transmitted by ticks (Ornithodorus erraticus). The incubation period varies from two days to one month. The early symptoms are those of infection of the lymphatic system followed by headache, chills, high fever, a feeling of pressure in the eyes, loud noises, gastralgia, constipation, at times gastric hemorrhages, insomnia, polyuria, genital disorders, hypotension and constant and early pleocytosis of the cerebrospinal fluid. The symptoms appear in cycles with recurrences. In a group of 180 cases there were two deaths. Borrelia hispanicum is neurotropic and is the cause of acute recurrent diencephalitis. The infection is frequent in rural zones of some of the Spanish provinces.

## Revista Médica de Rosario

**36**:127-210 (April) 1946

*Eosinophilia in Contents of Appendixes in Appendicular Oxyuriasis. V. J. Fantoni.—p. 127.
Defense of Public Health. F. Albornoz.—p. 150.
Case of Pernicious Anemia. C. Alvarez.—p. 174.
Penicillin in Treatment of Gonorrhea. C. E. Lucena.—p. 182.

**Eosinophilia in Appendicular Oxyuriasis.**—Fantoni investigated the presence of eosinophils in the contents of extirpated appendixes in 25 cases in which Oxyuris was found and in 25 cases in which these parasites were absent. Eosinophils were found in the appendicular contents of all the patients in whom the worms were found in the appendix and in 8 per cent of those who were free from them. The number of eosinophils encountered locally was in direct relation to the intensity and quantity of the appendicular lesions produced by Oxyuris and to the number of parasites found in the contents. Normal percentages of eosinophils were found in the blood of 92 per cent of the cases in contradistinction to the high indexes of oxyuric infections in the appendixes.

## Acta Odontologica Scandinavica, Stockholm

**7**:1-114 (May) 1946

Study of Paracapillary Nutrition Canals and Their Possible Sympathetic Innervation. S. Forshufvud.—p. 1.
Quick Decalcination of Teeth. C. M. Plum and J. J. Pindborg.—p. 58.
*Leukoplakia Oris. A. Hobaek.—p. 61.
What Role Does Treponema Vincenti Play in Certain Diseases of Gingiva? H. S. Klein.—p. 92.
Role of Mucin in Pathogenesis of Caries. H. Keiser-Nielsen.—p. 97.
Studies in Incisor Pigmentation in Relation to Liver Iron and Blood Picture in White Rat: III. Gastrectomy as Cause of Depigmentation of Incisors of Rats. J. J. Pindborg and C. M. Plum.—p. 105.

**Leukoplakia Oris.**—Hobaek treated 77 patients with uncomplicated leukoplakia at the Norwegian Radium Hospital during the period of 1932 and 1945. He also treated a total of 1,272 cases of cancer of the oral cavity, including cancer of the lips, during the same period. Of these 1,272 cancers, 169 have arisen in a leukoplakic lesion which has been located in the cheek in 24 cases, on the tongue in 44 cases, on the gingiva in 21 cases, on the palate in 10 cases and on the lips in 70 cases. In a series of 246 cases of leukoplakia there were 181 in men and 65 in women; the average age was 60.1 years. Most of the men were moderate to heavy smokers; none of the women smoked. Considering the great number of persons who are using or abusing tobacco compared with the relatively rare occurrence of a precancerous or cancerous condition in the oral cavity, it is suggested that there is an individual predisposition for the use of tobacco to lead to leukoplakia and in turn to cancer. In the author's 246 cases of leukoplakia there were only 20 with a positive Wassermann reaction or with a history of syphilis. Among the 44 patients with cancer of the tongue arising from a leukoplakial lesion, only 8 had syphilis. Jagged, carious teeth were found in only 12 cases and badly fitting prostheses in 29. The main point in etiology of the leukoplakias is a chronic irritation of a predisposed mucous membrane by a mechanical, less often by a thermic, chemical or electrogalvanic irritant. Electrocoagulation is the treatment of choice for uncomplicated epithelial hyperplasia, radium or electrocoagulation with subsequent radium application for all leukoplakias with signs of gross atypia. Leukoplakia is the most common precancerous condition in the oral cavity.

## Nordisk Medicin, Gothenburg

**29**:545-624 (March 15) 1946. **Partial Index**

Cultivation of Gonococci: Simple and Improved Method. T. Thjøtta and R. Amlie.—p. 545.
Institutions for Maternal Care in Denmark. Vera Skalts.—p. 546.
Injections by Way of Bone Marrow. J. B. Dalgaard.—p. 548.

### Hospitalstidende

*Electroencephalographic Examination of Epilepsy Patients (Preliminary Report). P. Høncke.—p. 549.

### Duodecim

*Frontal Lobotomy in Mental Disorders. G. Rylander and O. Sjöqvist.—p. 557.
Action of Histamine on White Blood Picture. L. Kalaja.—p. 572.
Pathogenesis of Skeletal Tuberculosis in Childhood. A. Ellonen.—p. 575.

### Norsk Magasin for Lægevidenskapen

Cases of Face Presentation in Woman's Clinic of Rikshospital, 1922-1942. T. Dahle.—p. 580.
Pregnancy and So-Called Spontaneous Subarachnoid Hemorrhage. T. Dahle.—p. 587.

### Hygiea

Investigations on Permeability of Placenta by Aid, Among Other Methods, of Blood Group Determinations, Corpuscles Labeled with Radioactivity and Elliptocytes. J. Naeslund.—p. 589.
Contribution to Knowledge of Measurement Error in Liljestrand-Lysholm-Nylin-Zachrisson Method for Determination of Heart Volume. O. Axén, E. Lindgren and G. Malström.—p. 592.
Attempts to Determine Value of Dehydrogenization Method (Decoloration of Methylene Blue) in Diagnosis of Spermatozoa. E. von Post.—p. 695.
Practical Points of View on Hypoxemia Test. T. Sjöstrand and H. Wahlund.—p. 599.

**Electroencephalographic Examination of Patients with Epilepsy.**—Høncke found dysrhythmia in 92 of 100 patients aged from 15 to 61 with definite epilepsy. Dysrhythmia was seen in 7 of 45 normal persons. The frequency and degree of dysrhythmia were not more evident in older than in younger patients or in patients with known predisposition to epilepsy than in those without. Dysrhythmia was more often more accentuated when the disease had been clinically manifest for a considerable period and was most pronounced in patients with focal seizures and with universal seizures. It is not always synonymous with epilepsy or a predisposition to epilepsy. The diagnosis of epilepsy cannot be made from the electroencephalogram unless it shows a typical grand mal pattern or typical spike and dome potentials.

**Frontal Lobotomy in Mental Disorders.**—Rylander and Sjöqvist performed a prefrontal lobotomy on 25 patients (14 with schizophrenia, 6 with presenile melancholia, 2 with senile dementia with depressive symptoms, 2 with obsessive states and 1 with hysterical psychopathy). Age is not a contraindication. The indication for the intervention is based on the emotional symptoms; other therapeutic resources should preferably have been exhausted or contraindicated and the disorder have lasted so long that spontaneous remission seems unlikely. The depressed patients recovered except 1, who died of pneumonia; 5 schizophrenic patients have become calm and more accessible, 2 are slightly improved, 1 has been discharged, the 2 with obsessions have lost their compulsive symptoms, the hysterical psychopath is calm and contented, the senile patients are less anxious. Immediately after the operation the patient becomes restless and extroverted. In an hour or two inertia sets in and the patient lies in a pseudostupor but gives short answers to questions. After a few days or a week the inertia gradually disappears and frontal lobe symptoms begin to develop. The inertia and lack of initiative are ascribed to postoperative cerebral edema. Information about the intellectual changes can be obtained only by examining cooperative and orderly patients, particularly those with certain obsessive symptoms. Special analysis in such cases indicates that after the operation thinking goes on in a more concrete way and the capacity for association is distinctly reduced; most other mental faculties are not impaired.

# Book Notices

**The Biology of Schizophrenia.** By R. G. Hoskins, Ph.D., M.D., Director of Research, Memorial Foundation for Neuro-Endocrine Research, Harvard Medical School, Boston, Mass. The Thomas William Salmon Memorial Lectures of the New York Academy of Medicine. Cloth. Price, $2.75. Pp. 191. New York: W. W. Norton & Company, Inc., 1946.

This approach to the study of schizophrenia from the biologic point of view is extremely well handled by the author, who as the director of research at the Memorial Foundation for Neuro-Endocrine Research, Harvard Medical School, is well equipped through training and experience to discuss the subject. As the author points out, schizophrenia primarily represents a distortion of the total personality, and its manifestations in different persons is as varied as the people themselves vary in their personal conduct. The book is divided roughly into three sections: (1) a discussion of the general background of the processes of life itself from the protoplasmic stage to that of man as he is today, (2) a comparison of schizophrenia with other biologic patterns and (3) a summing up of the principal functional deviations which are common to schizophrenia with an attempt to correlate the metabolic, endocrine and circulatory aspects. This book is well written and there is an excellent bibliography and index. It is recommended reading to every one interested in the study of this most challenging of personality disorders.

**Pharmacology.** By J. H. Gaddum, Sc.D., M.R.C.S., L.R.C.P., Professor of Pharmacology, University of Edinburgh, Edinburgh, Scotland. Oxford Medical Publications. Second edition, second impression. Fabrikoid. Price, $6. Pp. 460, with 75 illustrations. New York, London & Toronto: Oxford University Press, 1945.

Except for the addition of new facts and late references, the second edition of Dr. Gaddum's textbook is nearly identical as to form and content with the earlier edition (1940). In the author's words this book is intended for "medical students at a stage in their education before general principles become obscured by a mass of practical details but may also interest others." It also attempts to present the evidence justifying the trial of new drugs when such trial is requested of medical men by manufacturers.

Included are the original twenty-two chapters of the first edition covering inorganic salts and fats, vitamins, hormones of known structure, hormones of unknown structure, central nervous system stimulants, narcotics, the brain (a chapter devoted essentially to the central nervous system depressants), other depressants of the central nervous system, body temperature, sensory nerves, motor nerve endings, muscles, the alimentary canal, circulation, blood, kidney, respiration, proteins, toxic elements, drugs which destroy life, chemotherapy: worms and protozoa, chemotherapy: bacteria and general pharmacology. Each of these chapters is packed with a wealth of information considering their individual lengths.

The inclusion of brief clear tables and diagrams which present their evidence at a glance as well as brief discussions of the more common tests for hormones, vitamin deficiency and various medicinal agents add greatly to the usefulness of the book. The author has also included a certain number of references "with the object of putting inquisitive readers more in touch with the facts," though it is difficult to see how so incomplete a list of original references could hope to satisfy a really inquisitive reader.

As is the case in most first courses in a difficult subject, the author spends considerable space developing relatively simple notions while passing over, by mere statements, the more complex phases of the subject. The book, however, is replete with interesting incidents dealing with the discovery of many of the important drugs which will surely catch the interest of the uninitiated student who requires more of the "personal" touch to whet his intellectual appetite.

This edition contains some veterinary facts included, according to the author, "because of the light they throw on human medicine and partly to make the book more suitable for veterinary students."

A short, complete key to the interpretation of chemical names has been added at the end of the book. This key may be of particular use to the student and teacher who is interested in discussing further the relations of chemical structure to pharmacologic activity.

**Übersicht der gebräuchlichen und neueren Arzneimittel für Ärzte, Apotheker und Zahnärzte.** Von Dr. E. Bernoulli und Dr. J. Thomann. Sixth edition. Cloth. Price, 13.50 Swiss francs. Pp. 568. Basel: Benno Schwabe & Co., 1946.

Here is a synopsis of both official and proprietary medicinal articles believed by the authors to be currently available in Switzerland. It is more than a materia medica in that a summary of pharmacologic aspects follows each heading under which the drugs are described. The book will be of interest primarily to Swiss practitioners of that section of the country in which German is the language. In the preface the authors point out that the more recent special articles (new proprietary preparations) were formerly highly expensive but that these now compete effectively with and tend to supersede the older remedies. Despite this, careful consideration has been given to nonspecial (officially recognized) preparations of the Federal Swiss Pharmacopeia (Ph. D.) and their magistral prescriptions, the List and Tariff of Drugs (ALT), the magistral formulas that have been accepted by the Basle Sickness Fund (KKBa) and those of the Materia Medica Militaris (MM). These and other sources are likewise abbreviated in the text to denote the authority for many of the drugs listed: special articles (new drugs) in the provisional list of the sickness fund (KK); Pharmaceutic Formulary (Geneva), (F. ph.); Praescriptio Internationalis (PI); Swiss Pharmacist Association (SAV); Serum and Vaccine Institute (S.-I.). The names of manufacturers or owners of legally protected names for special articles that are included are indicated following the name of the product; abbreviations are also used for Burroughs Wellcome & Co. (B. W.) and Parke, Davis & Co. (P. D.).

The authors have preserved the classification employed in previous editions—drugs with identical therapeutic indications are grouped together under a general heading; drugs with various indications are listed under several headings that are applicable. Each heading is followed by a summary of the pharmacologic effect, indications, importance, secondary effect, toxic reactions and their treatment. These are frequently subdivided to classify the articles further as chemical preparations (pure substances), drugs, galenicals, extracts of organs. Compound preparations are listed separately under another subheading as compounds or mixtures. Finally under the heading "Additional Preparations" are listed in fine print articles that are less frequently used in Switzerland, special articles of insufficiently known composition and preparations that have been withdrawn. Small type is also used for sections considered of less importance to the physician. Prices are not given in this edition because of the great fluctuations to which they are considered subject at the present time.

The descriptions of the individual articles provide essential prescription data that include composition, properties, contraindications, dosage, administration and maximum dose. B. M. G. is used as an abbreviation to indicate an article that comes under the law limiting the manufacture and distribution of narcotic drugs.

The body of the text is divided into ten main sections for the grouping of articles according to their therapeutic application. This has been rather well done, the authors having selected sufficiently broad designations to minimize repetition in listing articles of wide application. For instance the first section is entitled "Drugs Which Have an Effect on the Nervous System," under which are classified (*a*) anesthetics, (*b*) hypnotics, sedatives, spasmolytics, (*c*) analgesics, antipyretics, (*d*) drugs for local anesthesia, etc. The outline, however, is not altogether perfect, as is illustrated by unqualified separation of local from general anesthetics. The tenth section concerns medicinal forms and preparations used for their production. It contains pharmaceutical data for making up various dosage forms such as emulsions, extracts, injections, capsules, solutions and plasters, to mention a few. Presumably in Switzerland such information is considered of interest to physicians that may not have access to the services of a pharmacist.

The main text is appended by a section giving sample prescriptions, a table of the important maximum doses of the Swiss Pharmacopeia, a table of important drugs from that authority with preparations that may be made from these drugs, a therapeutic index and an alphabetical index. The index of therapeutic indications is said to be considerably enlarged in

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this edition. The alphabetical register includes both names and synonyms of drugs to facilitate reference to the text.

The authors justify the exclusion of certain special articles on the basis that there has been produced a superfluity of remedies the evaluation of which is difficult because of inaccurate and veiled statements concerning their composition and the subjective recommendations of manufacturers or their medical advisers. In this respect the book may be said to represent a more selective compilation than the American publication Gutman's Modern Drug Encyclopedia, based on drugs marketed in this country. Nevertheless by other American standards the Swiss publication falls decidedly short of critical evaluation, including as it does many proprietary remedies and mixtures that have no rational basis in progressive medicinal therapeutics. The inclusion of advertisements of pharmaceutical manufacturers and chemists that list a certain number of such products with page references to the text suggest that the authors may have sacrificed critical analysis for financial support to publish the book. By European standards, however, the book should prove useful to those familiar with German and to that degree may serve as a suitable repository of information on medicinal remedies peculiar to the central European market.

**Topley and Wilson's Principles of Bacteriology and Immunity.** Revised by G. S. Wilson, M.D., F.R.C.P., D.P.H., Professor of Bacteriology as Applied to Hygiene, University of London, and A. A. Miles, M.A., F.R.C.P., Professor of Bacteriology, University of London. In two volumes. Third edition. Cloth. Price, $12. Pp. 970; 971-2054, with 302 illustrations. Baltimore: William Wood & Company, 1946.

Topley & Wilson has been regarded highly as a textbook ever since the first edition. Its good reputation has increased with the second edition, and there is little doubt that the present greatly enlarged third edition will add to the already large number of students who have learned to depend on Topley & Wilson as the reliable counselor in matters bacteriologic and immunologic.

Despite the double handicap of Professor Topley's death in January 1944 and the war, with the limitation of accessibility to foreign sources as only one of its many hardships, the new edition has been brought up to date and expanded. Two new chapters, on chemotherapy and on the bacteriology of air, have been added; one on soil microbiology has been left out. Separate chapters have been formed for the Shigella, the Salmonella and the psittacosis-lymphogranuloma group. In other respects the structure and treatment remain unchanged, which is pleasing to those who got to like Topley and Wilson as a book unique in many ways, its delightful style, lucidity and sober common sense approach being the first to come to mind.

There is no better critical introduction to immunology. It is fortunate that Topley's treatment of the subject has been retained, thus giving the new users of the book a two for one bargain, because the 296 pages of part III, on infection and resistance, contain the essentials of the 397 pages of Topley's exemplary An Outline of Immunity, published in 1933. The other three parts deal with general and systematic bacteriology and its application to medicine and hygiene. The 44 page well organized index is present in both volumes. Abundant references follow each chapter.

Professor Wilson apologizes in the preface for the increased length of the new edition. "The war has not been conducive to careful leisurely recapitulation," he continues; "and our plea must be the paradoxical excuse that we have not had time to be more concise." We failed to note any evidence of redundance or repetitiousness.

This is a substantial book, quantitatively and qualitatively speaking.

**Facial Prosthesis.** By Arthur H. Bulbulian, M.S., D.D.S., F.A.C.D., Director, Museum of Hygiene and Medicine, the Mayo Foundation, Rochester, Minnesota. Cloth. Price, $5. Pp. 241, with 202 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

This is primarily a manual for use by those to whom come those facial cripples unsuited for some reason to restoration by plastic surgery. Following a brief historical review, the author discusses the economic and social significance of facial deformities and their reconstruction. The larger part of the text is strictly practical, covering in a general way all the types of disfigurations likely to be encountered and describing in detail the steps to be followed in making impressions of these and preparing prostheses from them. The book is well arranged and readable, concise and explicit and with a large number of unusually good and clear illustrations. The binding is such that the book will lie open flat on the work table. In addition to the practical value of the included information there is a feeling throughout the text that the author is constantly aware not only of the missing nose, the empty orbit or the misshapen ear but also of the human being behind the injury, whose whole outlook on life can be changed through the skill of the technician. Industrial surgeons, military and naval hospital staff members and physicians, surgeons and dentists in general practice may all find something of value within the pages of this work.

**Health Education in Rural Schools and Communities.** By Nina B. Lamkin, Director, Public Health Education, State of Nebraska Department of Health. Cloth. Price, $2.50. Pp. 209. New York: A. S. Barnes and Company, 1946.

This is a constructive contribution to better appreciation of rural health problems and their more satisfactory solution. The volume is divided into five parts. In the first part the significance of health services, including dietary practices, is presented. An especially well rounded consideration of healthful living is contained in the second part, which is devoted to teaching children the basic essentials of health activities. This is expanded in part three to include the rural high school and community cooperation. Desirable preservice and inservice education as it relates to teacher health and preparation for giving health instruction is contained in part four. In part five, which presents additional general helps, there is a wealth of practical material such as special health record forms, observations made by teachers, a check list of school sanitation and a valuable consideration of tuberculosis in question and answer form. There is also a chapter showing how the various phases of a health education program can be evaluated. This consists of a collection of extremely pertinent questions. An extensive bibliography according to chapters is provided, and in addition names and addresses of publishers, commercial firms and magazines are listed. This volume can be heartily recommended. Even though the emphasis is on rural aspects, many an urban or suburban teacher or school administrator would find it valuable.

**Studies in Science.** Edited with a foreword by W. C. Coker, Kenan Professor of Botany, University of North Carolina, Chapel Hill, N. C. The University of North Carolina Sesquicentennial Publications. Cloth. Price, $3. Pp. 375, with illustrations. Chapel Hill: University of North Carolina Press, 1946.

This is an anniversary number of the *Journal* of the Elisha Mitchell Scientific Society and consists of thirty-one more or less unrelated sections dealing with the researches of the various departments of science of the University of North Carolina. All the authors are or recently have been on the staff of that school. The accent is, of course, on local researches, but in the discussion of the value and place of the work each field may be more or less covered. The subject matter includes wetting agents, nicotine derivatives, asymmetrical synthesis of organic compounds, stability of nitrogen-deuterium bonds in ammonium chloride, mathematics, physics, antibiotic production, quinine metabolism, surface phenomena in lipid films and cells, regeneration of lymphatic channels, injury of glomerulus of opossum kidney, blood volume changes after hemorrhage, fibroblast and acute inflammatory reactions, venereal disease in war, human cestode infections, drug plant culture in North Carolina, assay of nux vomica, moisture analysis of vegetable drugs, sexual inversion, brightness discrimination learning, response generalization in conditioning and three papers on zoology. In addition the appendix contains a list of publications from the various science departments of the university for the last ten years. This book is a valuable addition to reference libraries. The various topics are written for experts in their field, so that the average reader will find only parts of the book useful.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## TOXICITY OF MERCURY

*To the Editor:*—It is said that if the mercury bag on a Miller-Abbott tube breaks there is no danger of appreciable absorption of the mercury. Why then is mercury with chalk an efficient therapeutic agent? Is it because of the fine subdivision of the mercury? Is there a relatively painless and efficient mercurial for intramuscular injection in the treatment of syphilis?

M.D., Pennsylvania.

ANSWER.—The effectiveness of mercury with chalk is due to the fine subdivision, which offers a large surface for the chemical change into soluble compounds.

Concerning mercury in bulk, Sollmann's Manual of Pharmacology, Philadelphia, W. B. Saunders, 1942, p. 1126, mentions that this was formerly given in ileus in doses of 100 to 500 Gm. and that this "usually passes off by the feces with very little effect; sometimes there is diarrhea and stomatitis, and exceptionally, severe and even fatal poisoning." There is even a record of the intravenous injection of 27 Gm. in an attempted suicide. "The patient survived ten years in good health except for occasional diarrhea."

The generally preferred form for intramuscular injection is the Mercuric Salicylate Injection, U. S. P., a 10 per cent suspension in fixed oil, 1 cc. being injected weekly. The same author states that "it is effectively antisyphilitic and may produce stomatitis, but this is rarely serious. It has the advantage of causing relatively little pain."

## SUCROSE TOLERANCE TESTS

*To the Editor:*—What is the expected variation in a routine "glucose" tolerance test if sucrose is substituted for glucose? What is the rate of absorption of sucrose from the digestive tract as compared with glucose? If achlorhydria is present, would this cause a greater variation in the blood sugar curve? Please give references.

M.D., Nebraska.

ANSWER.—Sucrose tolerance tests have not been done in large enough numbers for statistically significant normal values to be established. Blood glucose levels, however, roughly parallel those obtained if glucose is the sugar administered. There is also a rise in the level of blood lactic acid, a fall in the carbon dioxide combining power and sometimes an appearance of fructose in the blood, none of which occur with the glucose tolerance test. The respiratory quotient rises rapidly, sometimes to a point above unity with the sucrose tolerance test, but it increases only slowly with the glucose tolerance test.

Sucrose is not absorbed as such from the gastrointestinal tract. It is broken down into glucose and fructose, partly by the hydrochloric acid of the stomach but chiefly by the enzyme invertase of the intestinal secretions. Glucose and fructose are then absorbed independently, fructose being absorbed only 43 per cent as rapidly as glucose. The fructose is then largely converted to glucose in its passage through the intestinal wall. This process of digestion and absorption occurs so rapidly that there is an appreciable rise in the respiratory quotient within four minutes after ingestion of sucrose. Symptoms of hypoglycemia respond equally well to glucose and to sucrose.

There is no reason for achlorhydria to cause any variation in the results of the glucose tolerance test. This factor is not mentioned in a recent study of variability of the glucose tolerance test.

"Diseases of Metabolism," edited by G. G. Duncan and published by Saunders, contains a survey of this subject.

References:

Campbell, W. R., and Maltby, E. J.: On the Significance of Respiratory Quotients After Administration of Certain Carbohydrates, *J. Clin. Investigation* **6**: 303 (Oct.) 1928.

Duncan, G. G.: Diseases of Metabolism: Detailed Methods of Diagnosis and Treatment: A Text for the Practitioner, Philadelphia, W. B. Saunders Company, 1942.

Rabinowitch, I. M.: Short Period Blood Sugar Time Curves Following Ingestion of Sucrose, *J. Nutrition* **29**: 99 (Feb.) 1945.

Freeman, Harry; Looney, J. M., and Hoskins, R. G.: Spontaneous Variability of Oral Glucose Tolerance, *J. Clin. Endocrinol.* **2**: 431 (July) 1942.

## INCREASED VASCULAR MARKINGS

*To the Editor:*—What is the significance of so-called increased vascular markings in roentgenograms of the chest? Is there any significance when the markings reach the outer zone of the chest?

M. C., A. U. S.

ANSWER.—The vascular markings, also known as bronchovascular and linear markings, are the shadows cast by closely related blood vessels, bronchial ramifications, lymphatics and intervening and surrounding connective tissue. In his monograph entitled "The Lung," Miller has clearly illustrated the close relationship of these structures which cast the shadows. These markings radiate from the root region into the lung field. As they emerge they appear as sizable trunks, but after repeated dichotomous divisions they become smaller and smaller until they are scarcely visible and are lost from view as they approach the periphery of the lung. The markings are large in the lower half of each lung field, particularly in the medial portion. On the left side they are partially obscured from view by the shadow of the heart. In thin persons the linear markings can be seen extending almost to the periphery of the lung, whereas in obese and muscular subjects they may be invisible beyond the middle of the lung field. Forced inspiration and expiration change their appearance somewhat, depending on the amount of blood in the vessels at the time the exposure is made. If the x-ray exposure is too prolonged, the markings may appear blurred or unusually wide or may even be reduplicated because of pulsations. The component structures included in the shadows (such as blood vessels, bronchial ramifications and lymphatics) cannot be differentiated from one another in the individual linear markings. Inflammatory processes in the bronchial ramifications and involvement of the lymphatics, resulting in deposition of fibrous tissue in their walls and in the connective tissues surrounding them, may increase the size and density of their walls. This results in greater absorption of x-rays and hence increase of the linear shadows. Again, congestion of the blood vessels results in more visible shadows. When these various conditions become extreme the linear markings may be visualized as far as the periphery of the lung. Therefore in such conditions as bronchitis, both acute and chronic, asthma with bronchial involvement and pulmonary congestion from any cause, the linear markings may be increased.

The cause of increase of linear markings can never be determined from the shadows; therefore other evidence must be produced, such as that of bronchial infection, attacks of asthma and cardiac conditions. There is considerable individual variation in linear markings; therefore they may appear beyond normal limits in persons in whom no disease can be detected. Again, disease may result in permanent changes, such as fibrosis, in the structures which cast the shadows, and thus the markings may appear increased long after the disease itself has disappeared. In many persons past middle life, while apparently in excellent health, the markings appear increased. Bronchitis, both acute and chronic, as well as asthma, may exist with no apparent change in the linear markings, and in such cases obviously the x-rays are of little value in diagnosis.

## TREATMENT OF VAGINAL MONILIASIS

*To the Editor:*—What is the best treatment for vaginal moniliasis in the ordinary patient and in a patient who cannot tolerate gentian violet?

M.C., U.S.N.

ANSWER.—Vaginal moniliasis or vaginal mycosis occurs, as a rule, only in pregnancy. Infrequently, nonpregnant adults who have vaginal moniliasis may have diabetes or have been on excessive or protracted estrogen therapy.

One per cent gentian violet in water or glycerin applied two to three times a week is probably as efficient as any fungicidal agent. The vulvar, lower pubic and perineal hair should be clipped. Special anal hygiene is important, since some of these women carry the same organisms in their intestinal tract and hence contamination of the vulva would favor reinfection.

Because the common sugars, such as glucose, maltose, levulose and sucrose, enhance the growth of these fungi with an increase in the symptoms, all such sugar should be excluded from vaginal therapy. Even lactose, which is not fermented by monilia, may sustain their growth. Gentian violet in suppositories or other vehicles has been tried, but its staining properties make self administration undesirable. An occasional patient will develop a reaction to it. The patient who cannot tolerate gentian violet can be treated by the use of dilute Lugol's solution, beginning with 1 per cent or weaker solution (1 part of Lugol's solution 5 per cent plus 4 parts of distilled water) instead of the U. S. P. 5 per cent. As the patient develops tolerance to the iodine, the strength can be gradually increased. The treat-

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ment should be given two to three times a week and applied to the entire vagina and vulva.

Hesseltine (*Am. J. Obst. & Gynec.* **34**:439 [Sept.] 1937) used potassium iodate ($KIO_3$) and potassium iodide (KI) in capsules diluted somewhat with kaolin. If 0.035 Gm. of potassium iodate put into tablet form with 0.5 Gm. of kaolin and 0.217 Gm. of potassium iodide are put into another tablet with 0.5 Gm. of kaolin, one each can be used at night. These tablets will be stable. (The pharmacist should not use sugars in the tablets but may use capsules.) Occasionally an iodine burn may be observed, but this is not serious.

At the present time a few clinics are making special investigations of nonirritating and nonstaining efficient fungicidal agents. There may be reports within a few months on these new and promising substances.

## SOUR TASTE

***To the Editor:***—**A man complains of a sour taste in his mouth at all times. He has two silver fillings. I find nothing wrong with him. Could you suggest a possible cause?**

**M.D., Wisconsin.**

ANSWER.—It is not possible to make a diagnosis from the data given. Several specific points should be investigated: Is the taste actually one of "sourness"? Is the breath foul? Is any medication being used? What does examination of the various tongue areas for taste show? (Wechsler, Clinical Neurology). Causes can be generally grouped as local or systemic, organic or functional.

The "silver" fillings which are mentioned could produce symptoms if the amalgams are of different composition; the symptoms, however, would most likely be a burning or prickling in a localized area. It is presumed that there is no dental plate present. Medications may cause taste abnormalities, but these are usually described as "metallic," though certain drugs may produce what the patient calls "sourness."

Oral infection can produce a constant "bad taste" but should be obvious from the appearance of the gingivae or the dorsum of the tongue. Bronchial infection or a postnasal discharge can produce an unpleasant taste. The tongue is considered to mirror the condition of the stomach mucosa: a deficiency disease may produce inflammation and atrophy (pernicious anemia) or inflammation (vitamin B complex); hyperchlorhydria is often associated with hypertrophy of the papillae. All these conditions can result in subjective taste changes through changes in the papillae. Nerve lesions (trigeminal) can produce trophic mucous membrane changes and thus a disturbance of taste.

Systemic diseases occasionally produce sour tastes, especially if accompanied by fever. Dengue fever has recently been reported to produce a "bitter" or "sour" taste in 84 per cent.

The central nervous system may be the origin of bizarre tastes. Situational intolerance, hysteria and the climacteric may all occasionally include taste symptoms. A lesion in the brain at the origin of the nerves of taste (facial and glossopharyngeal) could also produce a constant sour taste.

## TECHNIC OF HIPPURIC ACID TEST FOR LIVER FUNCTION

***To the Editor:***—**What is the technic of the sodium benzoate test of liver function? Is the intravenous test safe?**

**F. L. R. Roberts, M.D., Spirit Lake, Iowa.**

ANSWER.—The hippuric acid test for hepatic function may be performed by administering sodium benzoate either orally or intravenously. In the oral test 6 Gm. of sodium benzoate is administered to the fasting patient (who has first voided). The urine is collected hourly for the subsequent four hours. The urine is treated with ammonium sulfate 95 Gm. to each 10 cc., acidified with hydrochloric acid until it is acid when tested with congo red paper and filtered. The precipitate thus obtained is dried and weighed. The elimination of about 4 Gm. of sodium benzoate (3 Gm. when measured as hippuric acid) is considered normal. The total excretion may be greatly reduced in the presence of parenchymatous disease of the liver. For obvious reasons renal insufficiency or urinary obstruction vitiates the results of the test.

The intravenous test is performed by administering 1.77 Gm. of sodium benzoate dissolved in 20 cc. of sterile water. At least five minutes is required for the injection. The urine is collected at the end of one hour and the hippuric acid is measured either by the gravimetric method just described or by chemical titration. The latter procedure, while somewhat difficult, is preferred by some physicians because of its greater accuracy. The normal liver excretes 0.7 to 0.95 Gm. (measured as hippuric acid) in one hour after the intravenous administration of 1.77 Gm. of sodium benzoate in 20 cc. of distilled water.

Ampules containing 1.77 Gm. of sodium benzoate in distilled water may be obtained from the George A. Breon Company and from Hynson, Westcott and Dunning. Both preparations are safe and satisfactory for clinical use. The recently published results of Mateer and his co-workers (*Am. J. Digest. Dis.* **9**:13 [Jan.] 1942) appear to indicate a greater sensitivity of the intravenous test. It is now used routinely in many clinics.

## DERMATITIS FROM WALLPAPER CLEANER

***To the Editor:***—**A patient, aged 71, a few minutes after handling "Walvet" (Walvet Wall Paper Cleaner, Cleveland Cleaner and Paste Company, Cleveland), developed itchiness and swelling of the hands and in a few days a generalized dermatitis. Can you give me information as to the chemicals involved?**

**W. A. W. Switzer, M.D., Ridgway, Pa.**

ANSWER.—Many of the readily available low priced paste forms of wall paper cleaners contain a mixture of wheat flour, sodium chloride, hydrocarbon oil, a disinfectant and coloring material along with water sufficient to make a dough-like mass. In some starch is substituted for wheat flour; others may contain whiting or other mineral. Borax, alum or excessive salt may be used as a disinfectant or fungicide. It is possible that complex disinfectants such as the organic mercurials may have been introduced or at least experimented on. The plasticizer may be kerosene, naphtha, Stoddard's solvent or glycerin. The hygroscopic qualities of salt may be sufficient to preserve plasticity. The aniline dyes commonly employed are usually harmless. Some scenting agent may be introduced. The following is a representative formula:

| | |
|---|---|
| Water | 8½ lbs. |
| Sodium chloride | 5 lbs. |
| Aluminum sulfate | 4 oz. |
| Kerosene | 4.5 oz. |
| Wheat flour | 10 lbs. |
| Aniline red | 30 grains |
| Glycerin | 1 drachm |

In the absence of sensitivity to flour, and in the absence of any irritant disinfectant, such dermatitis as may arise probably is attributable to the kerosene or similar petroleum compound.

The particular brand of wall paper cleaner mentioned contains flour, sodium chloride, alum, kerosene and a green aniline dye. The quantity of kerosene present, in the absence of sensitivity, is unlikely to have inaugurated an immediate dermatitis.

## GASTROINTESTINAL DISTURBANCES FOLLOWING MAPHARSEN INJECTION

***To the Editor:***—**Is there anything to prevent the gastrointestinal disturbance arising from mapharsen administration?**

**James A. Snyder, M.D., Cape May, N. J.**

ANSWER.—The gastrointestinal disturbances following the injections of oxophenarsine hydrochloride (mapharsen) may be due to a variety of factors. In many patients it is a definitely psychic reaction, while in others it is evidence of drug intolerance.

Decreasing the dose or diluting the solution will occasionally minimize such reactions. The use of sugar in one form or another previous to the injection may prevent the reaction in certain patients. It is known that reactions are avoided in some cases if food is taken in moderate amounts before injection, while in others the same is true if food is omitted entirely for six hours before injection.

Accordingly, it is evident that the causes of such reactions are numerous and that various procedures should be followed in an effort to determine which is a factor in each case. In certain patients change of product or use of another arsenical may be necessary.

## "TISSUE THERAPY" OF RETINITIS PIGMENTOSA

***To the Editor:***—**Recently a considerable number of inquiries have come from patients with retinitis pigmentosa concerning the "tissue therapy" of this disease described by Professor V. P. Filatov of the Ukraine (Tissue Therapy in Ophthalmology, Am. Rev. Soviet Med. 2:53 [Oct.] 1944). Filatov has a high reputation as the originator of the corneal transplantation technic. However, attempts to get full details of his work have not been successful. Are any ophthalmologists in this country using or investigating the methods described by Filatov in the treatment of retinitis pigmentosa?**

**Michael B. Shimkin, M.D., Washington, D. C.**

ANSWER.—As far as is known there are no ophthalmologists in this country who are either using Filatov's technic or conducting investigations on his work on tissue therapy in ophthalmology. Apparently there is no further information at the present time regarding this method of treatment of retinitis pigmentosa except that contained in the article cited.

## TREATMENT OF PARKINSON'S DISEASE

*To the Editor:*—Is there any new treatment for Parkinson's disease? Is the Klemme operation gaining recognition? I understand that it is a type of prefrontal lobotomy disconnecting the nuclear tracts all the way through. Also I understand that $B_6$ (pyridoxine) has been given a lengthy trial and that histidine has recently been tried.

Harold E. Marks, M.D., Somerville, Mass.

ANSWER.—There have been no recent developments of value in the treatment of Parkinson's disease (paralysis agitans). All surgical treatments, including the cortical extirpation advocated by Dr. R. M. Klemme of St. Louis, are still in the experimental stage. At best the various operations which have been considered are suitable for only a few patients. All the operations carry with them considerable risk to life and in many instances result in a variable degree of paralysis of the involved extremities. Until more is known about the disease and the most effective type of surgical procedure, no operation can be regarded as recognized or accepted.

Dr. Klemme's operation is not a prefrontal lobotomy but an extirpation of a block of the cerebral cortical tissue from the frontal lobe.

Vitamin $B_6$ has been tried in cases of Parkinson's disease with little or no benefit.

## USE OF ESTROGENS IN 60 YEAR OLD WOMAN

*To the Editor:*—A woman aged 60 had a subtotal hysterectomy at the age of 45. Menopause symptoms were mild. Recently she consulted a physician because of generalized weakness and was given several injections of an estrogenic preparation followed by diethylstilbestrol. Of what value are estrogens in this case? Is there any danger in giving diethylstilbestrol to a patient of this age?

J. W. Robinson, M.D., Los Angeles

ANSWER.—The query does not state for what reason the body of the uterus was removed. If it was removed because of cancer the woman should not be given estrogenic substance, for if there is any remaining carcinogenic tissue belonging to the sex organs its growth will be stimulated. Some women of 60 develop a typical climacteric syndrome which is relieved by administration of estrogens. The fact that the woman is 60 years old is not a contraindication for the administration of estrogens, which will not cause harm in therapeutic doses.

The symptom of generalized weakness in a woman of 60 is not in itself a reason for the administration of estrogens. If this is the only complaint, complete physical and functional diagnostic studies are indicated.

## INTRAVENOUS USE OF SODIUM SALICYLATE COMPOUND

*To the Editor:*—What is the value of intravenous sodium salicylate compound in rheumatic conditions? Some patients smell the medicine after 1 cc. has been given. Is there any danger if such a symptom develops?

George C. Stimpson M.D., Poy Sippi, Wis.

ANSWER.—Sodium salicylate compound (sodium salicylate, sodium iodide and colchicine) may produce olfactory sensations following intravenous administration. Such reactions are ordinarily not a contraindication to its use. Since this combination is a "shotgun" preparation not well adapted to definitive therapy and since the constituent substances are satisfactorily absorbed from the intestinal tract, it is probably better to give the individual substances by mouth in such doses as are indicated. The salicylates (particularly acetylsalicylic acid) are useful for arthritic or neuritic pains of many types. In doses approximating 10 Gm. daily for adults, sodium salicylate is the drug of choice for acute rheumatic fever. Colchicine may be used for the pain of acute gout but is of no benefit in other types of arthritis. The iodides are commonly used empirically for degenerative arthritis but are of uncertain value.

## PURINE CONTENT OF VITAMIN B COMPLEX

*To the Editor:*—Does vitamin B complex contain purines? Is it harmful to give vitamin B complex to a gouty person?

M.D., California.

ANSWER.—The content of purines in vitamin B complex depends on the source and the degree of refinement of the end product. Beef liver contains 233 mg. of purine bodies per hundred grams of liver. "Bemax" and "Embo" are reported to contain up to 75 mg. of purine bodies in 100 Gm. (Pattee's Dietetics, p. 689). Yeast, which is generally a good source of B complex, is reported by Pattee to contain an insignificant amount of purine. Therefore, if liver is used as a source of B complex the end product may contain purine bodies, whereas if yeast is used there is little or no purine. Vitamin B preparations, therefore, which contain considerable quantities of purines should not be given to a patient with gout.

## TREATMENT OF HYPERHIDROSIS

*To the Editor:*—A white woman aged 34 has had excessive odorless sweating of the entire body in both winter and summer for as long as she can remember. A 12 year old daughter has the same complaint. Two sons are normal. The sweating is so excessive that the patient is forced to wear hose to absorb the perspiration on her legs and protective clothing for her body. Every day she has to change her dresses three to four times when doing ordinary housework and also has to change her shoes. The sweating is more excessive under any excitement. She does not go to social functions because of the embarrassment. She has felt weak lately and has been "catching cold" because of chilling when wet. History, physical examination and laboratory findings are entirely negative except for a chronic sinusitis and seasonal hay fever.

M.D., Virginia.

ANSWER.—The treatment of universal hyperhidrosis is a difficult problem even when it is symptomatic in nature. Then the treatment is essentially of the underlying disorder. When the latter is corrected, the excessive sweating disappears or is ameliorated. In the present case the cause of the disorder is unknown. Nothing pathologic other than the amount of sweating is found, no matter how carefully one examines the patient.

The internal remedies which have been recommended for universal hyperhidrosis of unknown cause are quinine, arsenic, iron, ergot and strophanthus. Atropine and belladonna give temporary relief. The use of sulfur internally is said to be of value. Perhaps the more useful phase of therapy is that which includes the local applications. Weak solutions of alum, zinc sulfate or tannic acid are effective. A 1 per cent formaldehyde solution in water or equal parts of water and alcohol may be tried. (Care should be used, because formaldehyde has a high index for sensitizing and not infrequently produces a dermatitis.) In conjunction with these watery applications, dusting powders are worth while. They may be used immediately on drying of the solutions and may include any of the following: talcum, lycopodium, boric acid and bismuth salts, with or without 2 per cent salicylic acid. A lotion of 1 per cent quinine in alcohol has been recommended, as has the use of soap for the bath, medicated with sulfur or juniper tar. A quiet and equable environment should be helpful. It may be helpful to use bromides or their substitutes as a soothing measure to reduce the patient's nervous tension and excitability.

## ORAL PENICILLIN

*To the Editor:*—Would there be any harmful effects in prescribing 4 teaspoons every three hours of 100,000 units of penicillin in 100 cc. of amphojel to children for acute infections such as tonsillitis? Would phosphagel or any other antacid be more desirable?

C. W. Atherton, M.D., Stambaugh, Mich.

ANSWER.—There would be no harmful effects in prescribing penicillin in amphojel to children for acute infections such as tonsillitis. Other antacids also may be used. It is now established that penicillin taken with antacids on an empty stomach will maintain higher blood levels for a longer time than when penicillin is taken without antacids and following meals. The principle to follow in oral penicillin is to give at least two to five times as much in a twenty-four hour period as would be used when the parenteral route is employed.

## RELATION OF DEXTROSE INHALATION TO DIABETIC COMA

*To the Editor:*— A patient with diabetes mellitus, controlled by diet and insulin at a blood sugar level of 120 to 130 mg. per hundred cubic centimeters, was transferred in a factory to a room which was said to be filled with dextrose vapor from the use of a dextrose spray. The patient did not feel well for the first few days. On the fourth or fifth day he became ill at home, lost consciousness and was hospitalized for diabetic coma. The blood sugar was 365 mg. per hundred cubic centimeters. Is it possible or probable that sugar can be absorbed into the blood stream by inhalation in such amount as to produce a rise in blood sugar to this level?

M.D., Illinois.

ANSWER.—Although direct information is not at hand, dextrose would probably be absorbed through the respiratory mucous membrane. However, it is improbable that the total amount so absorbed would significantly elevate the blood sugar and almost certainly not enough to produce definite hyperglycemia or precipitate diabetic coma.

## NEUROVASCULAR SYNDROME OF ARMS

*To the Editor:*—With regard to the item on "Neurovascular Syndrome of Arms Due to Hyperabduction" published in Queries and Minor Notes in The Journal June 8, 1946, page 568, similar or related symptoms due to elevation of the hands and arms and to pressure are common among persons who drive automobiles long distances without rest.

J. J. Horton, M.D., Eagle Pass, Texas.

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